THE POSITIVE FAMILIES PROGRAM: EXPLORING THE IMPACT OF A FAMILY ORIENTED MEDIA-BASED PROGRAM IN THE ARAB WORLD

By

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ABSTRACT

Families in the Arab world are rapidly changing and facing unprecedented political, social and health-related challenges, affecting the way families function and interact. However, few programs are implemented in the region to address family functioning and tackle these challenges. This study used evaluative data collected during the implementation of the Positive Families program to explore the impact and characterize the reach of the program to its intended audience in the Arab world. The study employed before and after design, with the intervention group being tested before and after the program implementation.

The Positive Families program is a media-based program that was implemented in 2009-2010 to promote the well- being of Arab families. Both mass media and social media platforms were incorporated in the program; the program's talk show was aired on television, while the website was used for participation and discussions. Contests and financial incentives were used to encourage participation in the program. Almost 30,000 individuals registered for the program from 87 Arab and non-Arab countries. For the purposes of this study, participants who registered but did not complete baseline measures of family function or program activities (n = 29,891) were termed minimally engaged; those who completed baseline family functioning questionnaires but did not complete all program activities (n = 1,530) were termed partially engaged and those who engaged in all program activities and completed both baseline and follow up family functioning assessment (n = 381) were termed fully engaged participants.

Differences in demographics and family functioning measures were found among these groups. Partially engaged participants reported higher baseline family functioning

levels (M=29.5, SD=8.3) in comparison to fully engaged participants (M=28.3, SD=9.8; p=0.03). Fully engaged participants scored higher in post program questionnaire (M = 38.5, SD=10.5) as oppose to the baseline questionnaire (M = 28.3) with a mean difference of 10.2 ($p < .001$). There was no evidence that participants' demographic characteristics influenced program impact.

These findings suggest that a positive family functioning program presented within a platform that combines social and mass media channels, is widely viewed and appears to be an acceptable vehicle for delivering culturally appropriate and relevant information to Arab viewers. The model is a promising vehicle for public health interventions designed to increase positive family functioning while addressing sensitive issues regarding family dynamics including child rearing, discipline and gender relationships. More studies are needed to evaluate and report family focused interventions in the Arab world.

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To my family, for their endless love and support.

And to all Arab families - especially those who go through uncertainty and instability on a daily basis, but still dream of a better future.

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CHAPTER 1: BACKGROUND AND LITERATURE REVIEW

Significance of Study

The past few decades have brought dramatic technological advances, social pressures, and economic challenges to the way modern families function and interact. Arab families are no different as evidenced by the recent political and socio-economic changes in the region. The Arab family is rapidly changing and faces unprecedented social and health-related challenges. In addition to significant health-related challenges, reflected in the high prevalence of type 2 Diabetes Mellitus, obesity and smoking, (Shaw, Sicree, & Zimmet, 2010; Khattab et al., 2012; Badran & Laher, 2012), social risks threaten the Arab family. These include poverty, unemployment, child labor, violence against women and children, and drug addiction. Although these risks are variable depending on country, they have largely affected the social and emotional wellbeing and development of the family unit as well as its members. For the most part, programs addressing these challenges have been fragmented and focused on at risk individuals or vulnerable subgroups such as women and children with few efforts targeting the family as a whole (Kandil, 2012).

The Positive Families program has been an exception. The Positive Families is a media-based program that was designed to promote positivity among Arab families by increasing their knowledge and influencing their attitudes and behaviors in regards to familial and social relations, self-development, physical, emotional and cognitive health. Mass and social media were used by the program in a dynamic way, reaching millions across the Arab region. The Positive Families program targeted the family as a whole and

addressed health-related problems along with social and emotional challenges facing contemporary Arab families. As further described in the background section of the thesis, a review of published studies in both English and Arabic have found few evaluations of family interventions implemented in the Arab region. Programs that were identified in the review were limited to a particular health outcome, for instance family planning, or targeted an individual family member, most often mothers (Hussien, 2008), or focused on Arab families living in non-Arab countries like the US and Canada (Mourad and Carolan, 2010).

The current study was designed to add to the small literature addressing family functioning in the Arab world by performing secondary analysis on evaluative data collected during the implementation of the Positive Families program to 1) characterize the reach of the Positive Families program to its intended audience in the Arab world, and 2) explore the impact of the program on reported domains of positive family functioning.

Literature Review

Families in the Arab Region

Arabs are people who speak the Arabic language and are linked with the nomadic tribes of Arabia (McGoldrick et al., 2005). They live in twenty-two countries located in the Middle East, the Gulf region, and North Africa. The total population of Arabs in 2015 was 392,022,276 million (World Bank, 2016). Today, Arabic is the first language for more than 280 million people (Nations Online, 2009). Arabic was named the sixth official language of the United Nations and is ranked as the fourth most widely spoken language in the world (McGoldrick et al., 2005). Muslim Arabs comprise about 93% of the Arab population, while the other 7% of Arabs are largely Christians (Johnson, 1996).

The Arab world embodies a combination of nationalities, ethnic groups, social classes, religious affiliations, linguistic communities, and residents of cities, towns and rural villages. The combination of nationalities and ethnic groups reflect differences in family values across and even within Arab countries. However, there are fundamental societal features and broad patterns that tie families together, despite the wide geographic scope and differences amongst the Arab population being described. Both family values and societal features are particularly important to consider when designing public health programs that target Arab families. Although in this review these societal features serve as the framework that guides our understanding of family dynamics, we acknowledge that they are broad patterns that do not necessarily apply everywhere. These features include the significance of the extended family as a system of support, the collective culture, the family connectedness, parenting styles, and the importance of religion.

Highlights of these features will be presented as a context for understanding the Positive Families program and the families it has targeted.

Despite the pressures that Arab families face today, such as industrialization, urbanization, war and conflict, and Westernization, the family continues to be the main system of support throughout the Arab world (McGoldrick et al., 2005). The family occupies a central role and a crucial influence, and is positioned at the core of society in the Arab world in religious, social, economic, and political terms. Family members not only look after each other extensively, but also provide access to jobs, institutions and government services (Joseph, 1994; Abi-Hashem, 2008). The notion of "support" is deeply rooted in the core of the Arabic words pertaining to family, not only in the social context but also in the literal sense. Two words used to convey family, “aila” and “usra”, both have roots meaning: to support. Further, once parents reach old age, their children transfer from the role of “eyal”, or dependents, to "sanad", meaning supporters (Barakat, 1993).

In spite of movements toward a more Westernized nuclear family, the extended family remains of utmost importance in Arab societies. Both immediate and extended members of the household are referred to as family, and a new marriage is not viewed as a separate unit, but as an essential part of the communal family and an extension of family members. A nuclear family might reside in their own household, but attention and loyalty to the extended family is usually maintained and expected. Although obligations and strong social connections to the extended family require dedication and can lead to less personal space, they provide a rewarding meaningful lifestyle and meet a great emotional need for warmth and belongingness (Abi-Hashem, 2008). Arab extended

families can be described as hierarchal with reference to age and sex, where young people are taught to respect and value their older relatives, and females are taught to respect and value their fathers and brothers. At the same time, elders are expected to protect and be responsible for those younger than themselves, and males are taught to take responsibility and guard their female relatives (Joseph, 1994; Abi-Hashem, 2008; Rasmi & Daly, 2016).

The Arab culture is collective and one in which the individual is embedded within the family context (Hammad et al., 1999). The identity of most Arab individuals tends to be collective rather than individualistic (Dwairy, 2002), the economic and social status of individuals is highly connected with their families' status, and decisions are made with all members in mind. It is common for family members to work together in the same businesses, own stores or land together, lend each other money, and share other economic assets (Joseph, 1994). Both men and women are expected to contribute to the support and maintenance of the family according to the traditional codes of family, and are responsible for the child rearing (Abudabbeh & Aseel, 1999). The actions of persons reflect on their family and affect its honor and reputation. Family honor implies that the sense of identity, status and dignity is linked to the position of the family in the community. Because the family reputation is central to identity, Arab families value privacy, particularly in regard to deviations from normative expectations. Consequently, open discussions or the seeking of professional help when facing personal or family difficulties can be viewed as a threat to a family's social standing (Dalky, 2012).

Regardless of the level of urbanization and modernization, Arab families continue close family connectedness by discouraging independence and separation of adolescents

from their parents as compared to families in Western societies (Dwairy et al., 2006). Strong connections to the nuclear and extended families are maintained by family members throughout the family life cycle. It is common for Arabs to continue living in the family home until marriage, even if it occurs in a later stage of adulthood (Ajami et al., 2015). Due to the emphasis of status and reputation of the family in the Arab culture, children are raised to sustain the customs and traditions of the family and are encouraged to maintain individual and familial reputation by avoiding "shameful" behaviors (Abi-Hashem, 2008).

Cross-cultural studies found that parenting styles and patterns vary across Arab societies. For instant, the controlling parenting patterns were mainly found among Palestinians in the occupied territories and among Saudis; flexible permissive parenting styles seem to be more common in Lebanon, Jordan and Algeria, while inconsistent parenting patterns were found among Yemenis and Palestinians in Israel (Khan et al., 2006).

Finally, religion is central in the Arab culture. Despite the wide range of interpretation of religious teachings and the various schools of thought in the Arab world, religious practices, values, and beliefs are part of every aspect of family life, including child raising, education, and relationships with others (Ajrouch, 2000). It is an important influence upon regional culture in which individuals are strongly affected by the teachings and practices of their religion. Religious organizations consider themselves the protectors of family integrity and hold families accountable for guarding religious righteousness. Marriage, divorce, inheritance, and child custody are guided by legally recognized religious institutions (Joseph, 1994). Although family laws are greatly

influenced by religion, codes and applications of these laws and the interpretation of religious teachings influencing these laws differ across Arab nations (Welchman, 2007).

Family oriented programs that aim to increase the awareness and improve the skills of Arab family members in areas such as child and family health, education, communication, and conflict management are of paramount importance for the wellbeing and development of families in the Arab region. New health issues, as well as changes in lifestyles and social structures that have been introduced to the society, have made it important to intervene with programs that offer counseling for parents, youth and families in general. However, such efforts will not be as effective without being culturally sensitive and considering the specific characteristics of Arab families, such as their communication styles, their values, loyalties, and the challenges they face.

Family Interventions

The family provides a foundation for the health and wellbeing of its members. Family functioning has been found to be a key contributor to the wellbeing of family members, especially youth and children (McClean & Cohen, 2007; Rapee et al., 2012). The broad concept of family functioning has been used in the literature as an umbrella term that encompasses several constructs of family structure and interactions within the family. As discussed by Kennedy and others (2015), these constructs include marital quality (Schermerhorn et al., 2011), parenting styles and behaviors (e.g., over protection, modeling, criticism) (McLeod et al., 2007), family adaptability and cohesion (Drake & Ginsburg, 2012), family conflict (Bögels & Brechman-Toussaint, 2006), low social support and stressful life events (Wilhelm et al., 2000).

A number of measures are commonly used by researchers when assessing family functioning (Kennedy et al., 2015). Examples are Beavers Self-Report of Family Functioning; a 34-item scale differentiating between neglectful and non-neglectful families (Beavers et al., 1988), the Family Assessment Measure; a 50-item measure distinguishing between distressed and non-distressed families (Skinner et al., 1983), and the Family Environment Scales; a 90-item scale measuring social climate (Moos & Moos, 1981). Another family functioning recognized measure is the Family Assessment Device (Epstein et al., 1983) which measures six dimensions that reflect healthy functioning of the family as a whole: problem solving, communication, roles, affective responsiveness, affective involvement, and behavioral control.

Family and parenting interventions, implemented mostly in the west, have been found to be associated with positive benefits to parents, such as increasing parental efficacy and the sense of competence, improving effective parenting skills and providing effective non-physical discipline methods (Connell, Sanders, & Markie-Dadds, 1997; Wells, Griest, & Forehand, 1980, Webster-Stratton & Reid, 2010), reducing levels of parental conflict and child physical maltreatment (Dadds, Schwartz, & Sanders, 1987, Barlow et al., 2006, Prinz et al., 2009), and reducing depression, stress, anxiety and parental mental disorders (Barlow et al., 2014).

Moreover, family interventions and educational programs have been found to be an effective strategy for enhancing children's cognition, educational achievements, and social abilities (Burger, 2010), reducing youth violence and disruptive behavior (Furlong et al., 2012, Piquero et al., 2008), and preventing children at risk from developing severe conduct problems (Kazdin, 1995; Sanders & Markie-Dadds, 1996).

Despite the promising advantages of participation in these interventions, there are low rates of participation and high rates of drop out among parents in these family programs. Studies suggest that only 10% of targeted parents participate in family educational interventions (Sanders et al., 1999). In addition, 20% to 80% of families drop out prematurely, with many receiving less than half of the promoted intervention (Masi, Miller, & Olson, 2003).

Although there has been a substantial body of research over the past few decades evaluating interventions that target parents, children and the family as a whole, a significant gap exists in regard to the efficacy of family training programs in developing countries (Knerr et al., 2013; Mejia et al., 2012). A review of reviews of studies on child maltreatment prevention reported that only 2 of 298 were implemented in low and middle income countries (Mikton & Butchart, 2009). Countries classified as low or middle income countries usually share key characteristics such as income inequality and poverty (OECD, 2012), violence (Institute of Medicine, 2008) and weak social and healthcare systems (Knerr et al., 2013). Arab countries, classified as developing and middle income countries, are no exception. Pressures of poverty, inequality, war and conflict that exist in a number of Arab countries, in addition to constant social, political, and economic changes in the region make an urgent call for effective family interventions.

Mass Media and Public Health

Mass media refers to "channels of communication that involve transmitting information in some way, shape or form to large numbers of people" (Livesey, 2011). Mass media plays a variety of important roles, including entertainment, disseminating

information, setting agendas for individual and societal discourse, and influencing behavior. Mass media programs have been used to promote healthy behaviors and discourage unhealthy behaviors and they have become a popular public health vehicle to improve the health of the public (Hornik, 2002; Institute of Medicine, 2002). The great promise of mass media programs lies in their capacity to spread well-defined behaviorally focused messages to large audiences repeatedly, over time, in an incidental manner, and at a low cost per capita (Wakefield et al., 2010). Television is a long-standing vehicle of mass media; it reaches huge audiences across socioeconomic, cultural, and national boundaries. Media is used in public health campaigns every year encouraging listeners to become active, eat healthy, practice safer sex and stop smoking (Randolph & Viswanath, 2004).

Several studies have been conducted to evaluate the effectiveness of mass media interventions in the field of public health. A number of reviewers have concluded that the success of these types of interventions has varied greatly, and that the effectiveness of such efforts is hard to measure (Hornik, 2002). However, reviews of health communication programs and campaigns, (Abroms & Maibach, 2008); Wakefield and her colleagues (2010) conclude that most mass media interventions, by themselves or combined with other programs, can positively influence the health behaviors of large populations. Despite the fact that healthy behavior interventions sometimes compete with commercial promotion of products linked to health risks, powerful social norms, and behaviors driven by addiction or habit, the programs appear to play a role in improving population health behaviors.

The influence of media campaigns on health behavior is achieved through both direct and indirect pathways (Hornik, 2002). Direct effects are reflected in exposure and program reach while indirect pathways change norms that influence behaviors without direct exposure to a campaign. Second, messages of mass media can increase the frequency and depth of discussion about a health outcome within the person's social network. These discussions, combined with or without individual exposure to messages act to reinforce behavioral changes. Public discussions of health issues can also be encouraged by mass media campaigns, leading to changes in public policies that affect behavior change (Wakefield et al., 2010).

A particularly effective element of campaign success is the use of multiple intervention strategies rather than relying on a single program (Randolph & Viswanath, 2004). Programs that have been more comprehensive in terms of combining strategies such as community events, print materials and promotion through multiple health professional channels result in greater behavior change (Marshall et al., 2004). Other elements of campaign success include creating the appropriate messages for distribution through social marketing tools and developing theory-based campaigns in which health behavior determinants are clearly linked to targeted health outcomes (Randolph & Viswanath, 2004).

Social Media and Public Health

Over the past two decades, the rise of the Internet has driven a communication revolution, changing in many ways how we think of utilizing mass media to promote public health (Strecher, 2007; Suggs, 2006). The rapid growth of the internet has

provided individuals and organizations with new powerful and dynamic communication tools with the ability to influence millions of people, independent of traditional mass media channels and their gatekeepers (Abroms & Maibach, 2008). These powerful online platforms promote the development of the field of public health as they offer flexible inexpensive communication tools that can rapidly and effectively tailor health information to the needs of varied audiences (Strecher, 2007).

Social media refers to "activities, practices, and behaviors among communities of people who gather online to share information, knowledge, and opinions using conversational media" (Safko, 2010). Applications of social media are generally categorized as forums, review and opinion sites, social networks, blogging, and media sharing (Stern, 2010). In the United States, sixty-five percent of adult internet users use social networking sites (Madden & Zickuhr, 2011). Among young adults (ages 18-29) 89% use online social networks and 87% access the Internet on their phone (Brenner & Smith, 2013). Moreover, studies demonstrate that 60% of large corporations use Twitter accounts and 56% have Facebook profiles (Barnes, 2010). Among US 200 largest charities, the use of at least one form of social media increased from 75% in 2007 to 97% in 2009 (Barnes, 2011).

Within the field of public health, social media can be utilized to enlighten, educate and empower people about health issues (Vance et al., 2009), to facilitate behavioral change (Frost & Massagli, 2008), to understand public perception of issues (Chew & Eysenbach, 2010), and to mobilize community partnership and activities (Thackeray & Hunter, 2010). Although several public health entities are actively utilizing social media, such as the Centers for Disease Control and Prevention (CDC, 2012), the use of social

media by public health agencies is in the early adoption stage, and the reach of social media is still limited (Thackeray et al., 2012). Additionally, there is a scarcity of data on the use of social media within broader public health settings (Thackeray et al., 2012).

In the Arab region, the exponential growth of social networks in the daily life of people enhances transparency, creates communities, and provides a vast amount of information. It is argued that the the most remarkable and pioneering improvement in freedom of expression, alliance, and access to information in contemporary Arab history is witnessed in the Arab social media sites, blogs, online videos, and other digital platforms (Ghannam, 2011).

The Arab world has been witnessing a rapid growth of Internet and social media usage, with an estimated 58 million Arab users of Internet in 2009, and an estimated 157 million Arab users of Internet in 2015 (Eid et al., 2015). In 2013, 77% of social media users were between 16 and 34 years (gogulf, 2013), and in 2014 67% of Facebook users were between 15 and 29 years, showing that the majority of social media users in the Arab world are youth (Arab Social Media Report, 2014). By 2014, the number of social media users increased by 49% on Facebook, 54% on Twitter and 79% on LinkedIn (Arab Social Media Report, 2014). The fastest growing markets for Twitter at the present time are in the Arab world, with active users tripling in the region in the last 12 months. Facebook alone is thought to have 24 million users in the Arab region, and Arabic is the third most used language on Facebook worldwide (Merrigan, 2013).

Despite the increase in internet use across the Arab region, rates vary from one country to another; Saudi Arabia had more than 20 million internet users out of a population of 31 million in 2016 in contrast to Egypt with approximately 34 million

internet users out of a population of 91 million and Algeria with 15 million internet users in a population of 40 million (Internet World Stats A & B, 2016).

Although effective mass and social media work is increasingly a part of modern public health practice, as it has a major role in shaping the social and policy environments, the use of social media as a public health tool is still limited in the Arab region. Despite the large number of studies and reviews addressing the use of social media as a political tool, especially during the Arab spring, only a limited number of studies have focused on the role of social media in health promotion. The small literature may not only be a result of the scarcity of programs that utilize social media in promoting public health, but also to the lack of documentation, evaluation and publication of public health efforts in the Arab region (Sweileh et al., 2015).

The importance of using social media platforms as a medium for public health education in the Arab world has been noted by a number of researchers (Bahkali et al., 2015). The use of social media channels to seek web-based medical information, in addition to being a communication tool between healthcare providers and patients are among the main topics found in the literature on social media in the Arab region (Almaiman et al., 2015; Alsobayel, 2016). In short, the growing and innovative adoption of social media in the region during recent pressing social, economic and political transformations has implications for public health efforts in the Arab region.

CHAPTER 2: STUDY AIMS AND EXPLORATORY QUESTIONS

The primary study aims are twofold: (1) to characterize the reach of the Positive Families program to its intended audience in the Arab world; and, (2) to explore the impact of the Positive Families program on reported domains of positive family functioning.

Exploratory Questions Related to Aim 1

There are two exploratory questions that will be addressed in regard to characterizing the reach of the Positive Families program:

Exploratory Question 1: Are there differences in demographic characteristics of study participants who had full, partial, or minimal engagement in the Positive Families program?

Exploratory Question 2: Are there baseline differences in the 12 reported domains of family functioning that distinguish participants who had full and partial engagement in the Positive Families program?

Rationale

Since little is known about family engagement in social media programs, the first two questions will characterize groups of Positive Families participants who have made contact with the program and for whom some information has been collected. This includes the ~30,000 who registered but did not continue contact with the program and participants who partially or fully participated. This will be done through an analysis of baseline measures reflecting participants' country of origin, gender and age as well as 12

reported areas of family functioning. Full engagement is defined as having answered the baseline and the post-program questionnaires, completed online weekly exercises, and submitted the family project; partial engagement is defined as having answered the baseline measures and completed some of the online weekly exercises and minimal engagement is having only registered for the program.

Exploratory Questions Related to Aim 2

There are two exploratory questions that will be addressed in regard to characterizing the impact of the Positive Families program among the participants who completed the program's post-program measures of family functioning.

Exploratory Question 1: What impact does full engagement in the Positive Families program have on changes in reported measures of positive family functioning?

Exploratory Question 2: How might demographic characteristics (age groups, gender, and nationality) moderate the impact of full engagement in the Positive Families program on changes in reported measures of positive family functioning?

Rationale

Research on mass media interventions in the West have shown that family-based interventions, by themselves or combined with other programs, can significantly influence the health behaviors of populations (Abroms & Maibach, 2008). Constructs of Social Cognitive Theory (Bandura, 1986) were used to explain the processes through which participation in the Positive Families program is expected to lead to higher levels of positivity in the family, as further discussed in the following chapter. As little is known about the nature and degree of change expected as a result of family-based

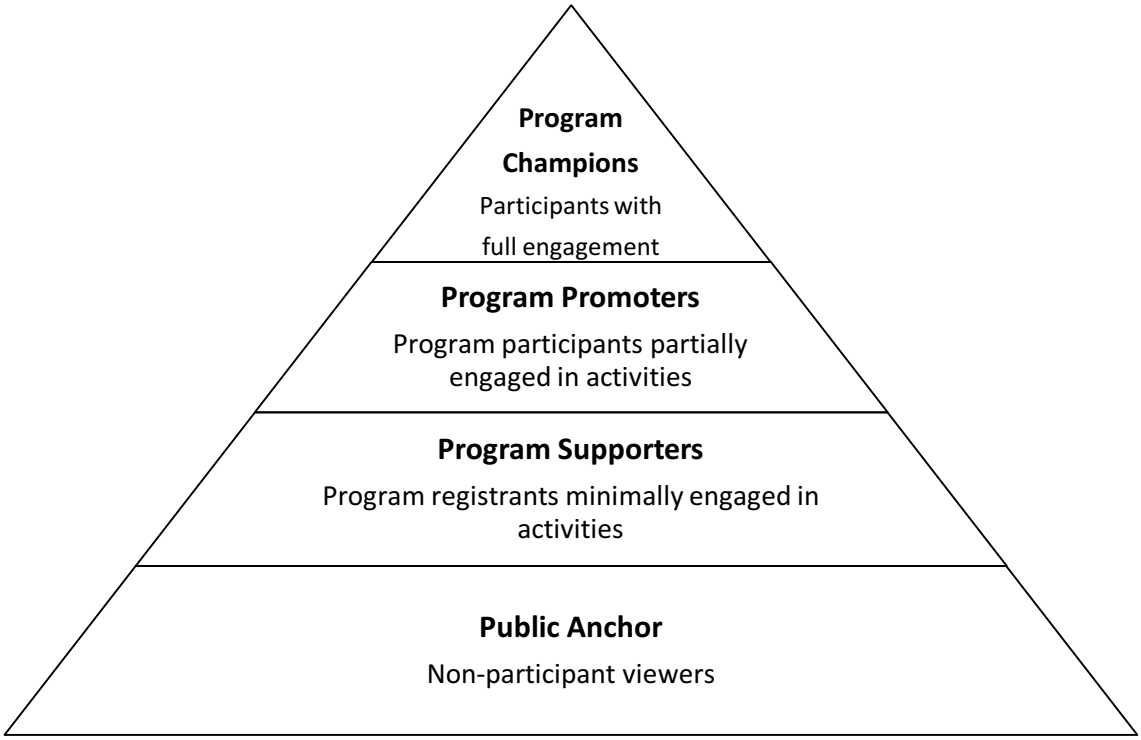
programs, and about the population subgroups and how they would respond to this kind of programs, exploratory questions related to aim 2 are anticipated to shed light on the impact of the Positive Families program among fully engaged participants across different demographic characteristics.

Study Framework

Figure 1 presents the heuristic used to frame the evaluative approach taken in this study to estimate program impact. The tip of the pyramid shows a core group of program participants with sufficient commitment and motivation to complete all program activities and questionnaires; these participants are fully engaged and defined as program champions. Program promoters represent a larger segment of participants who partially engaged with the program in a less formal way than champions but had sufficient interest and motivation to complete the baseline questionnaire. A larger population segment registered for the program but did not continue formal engagement with program activities and did not complete study questionnaires. Nevertheless, these participants appeared positively drawn to the program and provided minimal demographic information. Since on line registration suggests positive interest in the program, we consider these minimally engaged participants as program supporters.

The anchor participants at the base of the pyramid represent the wide public audience following the campaign and viewing media programing without formal engagement in program activities or evaluative efforts. These anchor participants are estimated to be millions of families around the Arab world who were not subject to any evaluation. This estimation was based on studies on media exposure in the Arab world

that show that the average time Arab adults spend with media, including internet, TV, radio, newspapers, magazines and books is nine and a half hours per day, in which 30% is spent on watching TV (Dubai Media City, 2016). In addition, private free-to-air channels that target Arabs have the highest total viewer among Arabs. An example is



MBC channels with an average of 100 million total viewers (Dubai Media City, 2016).

Aim 1 focuses on all participants of the Positive Families program and seeks to provide insight into understanding of participants' background, by characterizing the reach of the Positive Families program

to its intended audience in the Arab world., **Aim 2** focuses only on fully engaged participants who have completed all components of the Positive Families program and focuses on exploring the impact of full engagement in the Positive Families program on reported domains of positive family functioning.

CHAPTER 3: STUDY DESIGN AND METHODS

Study Design

This study was conducted through secondary analysis of data that was collected as part of the Positive Families program. Before-and-after design was the method used in the program, in which the intervention group was tested before and after the program implementation, with no comparison group.

Study Participants

The Positive Families Program population target were Arab families who speak Arabic, have access to television (specifically Arabsat and Nilesat) and access to the Internet. Participants were recruited online and baseline and post program measures were administered online.

Inclusion criteria for the program was being 15 years old or older and having access to TV and the Internet and participants were required to set up an online account on Positive Families website. This account was used to identify participants, save and organize their answers and activities, and provide them with access to the online forum on the Positive Families website. Before setting up the account, participants were required to electronically consent to study procedures and agree to allow the program to use their information (unidentified) in conducting future research.

As this study involved secondary data analysis of an existing, de-identified dataset, the Johns Hopkins School of Public Health IRB classified the study as "Not Human Subject Research" as defined by DHHS regulations 45 CFR 46.102.

Description of the Positive Families Program

The Positive Families is a media-based program that was implemented in the period from December, 2009 to April, 2010. It was designed and implemented by Holol Center, a non-profit organization based in Riyadh, Saudi Arabia. Sponsors from various Arab countries funded the program. The Positive Families aimed at promoting families' well-being, awareness of good parenting practices, and children's emotional, behavioral, social and academic development. The program was established after the enormous success of a 2008 media-based program called Positive Individuals which focused on individual productivity. Positive Families targeted not only individuals but the family as a whole. As a way to motivate family members to engage in program activities, a series of competitions were held in which prizes of varying monetary value were awarded during or by the completion of the program.

The Positive Families Campaign

The program was announced through a multi-country campaign in the Arab region with program promotion in newspapers, TV, Internet, and other forms of printed materials. Online banner references to the program were displayed more than 81 million times on fifty Arabic websites, three million program promoting emails were sent, five newspaper articles and a half a page colored advertisement appeared in the Al-Riyadh newspaper. In addition, 100,000 brochures, and 200,000 phone text messages were sent to reinforce program promotion.

Mass and social media components

Both mass media and social media were used in the Positive Families program; the program's talk show was aired on television, while the website was used for participation and discussions. The talk show was aired on Almajd General Channel every Sunday at 10 pm, and repeated every Monday at 9:30 am for four months, for a total of sixteen episodes. Episodes were also accessible on the Positive Families website. The first episode was an introduction to Positive Families, episodes two through fourteen addressed the twelve family functioning domains highlighted by the program. The last two episodes discussed the family project and included audience call-ins and feedback on the program. Almajd TV Network broadcasting and production is Saudi free-to-air channels with headquarters in Dubai, Riyadh and Cairo, and is aired on both Arabsat and Nilesat (Almajd TV, 2016), reaching Arab audience all over the world.

Each episode of the Positive Families consisted of a talk and a discussion about a distinctive positive family functioning domain by the main host, Dr. Alahmad, PhD in counseling psychology, and other guest hosts. During the discussion, a report was presented on the domain addressed in the episode, including supporting videos, displays of relevant statistics, and street interviews. The audience in the studio participated by asking questions, giving opinions and examples from their families.

Families also sent in personal videos of their family members (mostly children) while making a positive contribution to their family or community. Examples of these videos included a family starting a small library in the house, volunteering with community organizations, and children helping their mother clean up the house. At the end of each episode, selected videos were featured and awards given to exemplary family

videos. Participation in the video competitions was not limited to study participants and open to the public. A total of 170 individual family videos were featured during the course of the campaign.

The Positive Families website was designed in a way that would encourage participation and interactive discussions among participants. The website's forum, which was the most active part of the website, contained online resources, uploaded episodes, and participants' discussions. Examples of the online resources were articles, links to family empowerment websites, training kits, and weekly exercises. The average number of website visitors during the four months of the program was 18,152 each day, and the number of materials downloaded was 952,918 files, including audio, visual and PDF files.

Awards and prizes

Participants who fully participated in the Positive Families program (filled out both questionnaires, watched the episodes, completed the weekly exercises, and submitted the family project) entered a competition to win a positive family award. Participant evaluation was based on the following criteria: 30% for completing baseline and post-program questionnaires, 20% for activities in the online forum, 20% for completing the online weekly exercises, and 30% for submitting the family project. The total monetary value of awards disseminated in the Positive Families program reached more than 500,000 Saudi riyals ($133,000). The largest awards were land worth $13,333, and a car worth $10,666. Five awards were worth $2,666; 3 $1,866, 5 worth $1,333 and 10 worth $800 each. In addition, awards were granted to family members who won the family video competition, including smart phones and merchandise coupons worth $500.

The Positive Families domains

The program was focused on 12 domains found to be key in addressing functioning in the family, including familial and social relations, self-development skills, emotional wellbeing, cognitive development, physical health, and spiritual growth. The specific twelve domains are: *positive thinking, effective communication, safe physical and emotional environment, effective parenting, love and affection, family and community engagement, spiritual and moral values, assignment of roles and responsibilities, planning and decision-making, cultural and academic development, problem solving, and family gathering.* An equal number of items of the questionnaire covered each of these domains, and each domain was presented in a separate TV episode of the Positive Families program.

Study procedures

After establishing an online account and electronically signing consent for participation in the study, participants completed a baseline program questionnaire about family related habits and behaviors, which covered the main domains of the Positive Families program. Once enrolled, participants watched sixteen weekly episodes of the Positive Families on TV or on the Positive Families website. In addition, they filled out online weekly exercises, which were designed to assess participants' knowledge of the episode of the week, and encourage practical application of the concepts learned in that episode. At the end of the program, participants were asked to fill out the post-program questionnaire to measure possible changes that could have occurred as a result of the program. The last component was designing a small family project aimed at making a

positive contribution in the family or social setting that would incorporate the different domains of the Positive Families program. Examples of the family projects included volunteering as a family at a soup kitchen, or establishing a home library that all members of the family benefitted from. The project outlines were submitted online through the Positive Families website.

Theoretical Basis of the Positive Families Program

The Positive Families Program elements and its hypothesized effects may be understood within the context of Social Cognitive Theory (Bandura, 1986). The theory emphasizes the dynamic interaction of personal, behavioral and environmental influences on human behaviors. It also addresses collective action through which individuals work together within social groups to affect change in their environment for the benefit of the whole group (Glanz et al., 2008). The degree of participant engagement in the Positive Families program, and ultimate program effect, is hypothesized to be influenced by multiple factors, including baseline levels of family positivity, key demographic factors, including gender, age and nationality, and the extent to which individuals participated in program activities.

Four constructs of Social Cognitive Theory are used to explain the processes through which participation in the Positive Families program is expected to lead to higher levels of positivity in the family. These constructs are: collective efficacy, observational learning (modeling), reinforcement through program incentives, and self-regulation. The implementation of these constructs in the Positive Families program is illustrated in (**Table 1)**.

Table 1
Construct of Social Cognitive Theory and their illustration in the Positive Families program

Concept	Illustration
Collective efficacy	Improving each family member's beliefs of their capability to increase positivity in the whole family, through: - *Participation:* any member of the family who is 15 years old or older had the ability to represent the family and advocate for their positivity. - *Content:* beliefs that personal efficacy is not detached from the rest of the family, and that members have the ability to change their behaviors and influence their families have been encouraged throughout the program - *Weekly topics and exercises:* Introducing family positivity in separate weekly topics and exercises to facilitate gradual change and encourage the collaboration of family members to achieve higher levels of positivity
Observational learning (modeling)	- *Participants' online modeling:* in the Positive Families online forum, participants discussed the topics of the Positive Families program through examples of their own families. These narratives influence beliefs and behaviors of other participants who read and discuss these stories. - *Participants short videos:* videos that were sent by participants were aired during every episode of the Positive Families program displaying families in their homes and communities practicing the concepts of family positivity, showing participants that others like themselves can implement concepts of positivity in their own families.
Reinforcement	Numerous tangible rewards were distributed during and at the end of the Positive Families program to encourage participation and affect behavioral change. These rewards included: - *Short videos weekly prizes:* valuable prizes were given to participants who won the short videos competition. In every TV episode, three winning videos were displayed and their rewards were announced. - *Positive family prizes:* valuable prizes were given at the end of the program to fully engaged participants who won the competition of Positive Families. More details of these rewards are available in the awards and prizes section.
Self-regulation	- *Positive Families online forum activities:* online posts and discussions by participants have provided them with the social support that encourages self-control. In addition, participants have

	received feedback from Positive Families team members as well as other participants. - *Weekly online exercises:* these exercises facilitated self-monitoring as they help participants observe their gradual changes during the program.

Measures of Positive Family Functioning

Items reflecting positive family functioning constitute the main measure of the Positive Families program impact. Arabic and English surveys and questionnaires that are related to the topic of the study were reviewed prior to developing the questionnaire. Examples of these surveys include the Family Assessment Device (Epstein et al., 1983), The Meaning of Life scale by Harun Alrashidy (Maamria, 2012) and Thinking Styles (Bramson, Parlette, & Harrison, 1985).

A 5-point Likert scale was used with the following response categories: never, rarely, sometimes, usually, and always. **Table 2** displays the questionnaire items used at baseline and post-program organized to reflect the Positive Families program topics.

Table 2

The Positive Family Functioning Questionnaire

Domain	Questionnaire Items
Safe Physical and Emotional Environment	- Fruits and vegetables are included in our daily meals - When an argument occurs, my family members are careful to respect the feelings and dignity of others. - Members of my family are physically active several times per week - Spanking is used as a discipline tool in my family - We spend part of our free time engaged in physical activities - One of my family members smokes inside the house with people around him/her - My family members have a feeling of safety within the family
Cultural and Academic Development	- My family values academic excellence - We follow scientific documentaries on TV or online. - Members of my family attend lectures and cultural seminars. - Intellectual topics are part of our family discussions - Members in my family read for pleasure (non-academic books)

	- When we spend time on the internet, we browse intellectual websites - We have a small library at home
Love and Affection	- The phrase "I love you" is used frequently among my family members - Hugging and kissing are used to express affection in my family - We share details of our personal life in my family - There is a prevailing sense of understanding among the members of my family - Members of my family tend to discuss their concerns with non-family members - My family members feel comfortable and reassured when they are together - We enjoy spending our leisure time together
Roles and Responsibilities	- The father in my family has a clear role in guiding and parenting children - Children in my family are given the chance to temporarily manage the family budget - One of the parents or older siblings follows up with the children in my family regarding their schooling and studies - Older siblings have a significant role in guiding younger siblings. - My family members are given a sense of importance and value - Each member of my family has a specific responsibility - We cooperate to fulfill our needs/to reach our goals
Positive Thinking	- I perceive my family as a positive family. - My family members focus on developing all positives, and addressing any negatives. - We have obstacles that we are unable to overcome - We try to take advantage of and learn lessons from the experiences we go through even if they were unpleasant - Members of my family can be characterized as satisfied and content - In my family we take advantage of all available opportunities to achieve success and excellence - When discussing a topic, we approach it from multiple perspectives
Problem Solving	- When solving a problem, we define the main elements of the problem and its components. - When faced with a particular issue or problem we focus first on gathering information about it. - When a problem occurs, we propose several solutions then we choose the best among them. - We take the time to think of and consider the problems we face - My family members have hasty reactions towards any problem - We take practical steps to address problems

	- All my family members participate in solving family problems
Family Gathering	- We enjoy getting together and discussing topics of interest to us. - Members of my family prefer to spend most of their time with their friends outside the home - My family vacations together - All my family members gather at least once a week to spend time together as a family - In my family, we organize activities for the children of the family - My family members prefer family gatherings over staying alone in their rooms - Silence dominates our meal times and family gatherings
Effective Communication	- My family is characterized by the existence of dialogue between family members - Members of my family are honest - We avoid negative conversations that serve no purpose. - Our discussions are based on logic and persuasion - When one of my family members makes a mistake, he/she admits it - My family members deal with each other with transparency - Every member of my family is given the opportunity to express his/her opinion
Spiritual and Moral Values	- Members of my family are keen to perform the five daily prayers - Members of my family reference the teachings of Islam in their decision-making. - My family members assist each other in practicing Islamic teachings. - We watch or listen to religious programming on TV, radio or online - Our belief in our faith gives us contentment and helps us overcome any crises our family faces - My family members apply religious values in their daily interactions (such as honesty, trustworthiness, and dedication at work) - My family members participate in volunteer work and charity (for example with: non-profit organizations, charities, orphanages, etc.)
Planning and Decision Making	- My family members tend to talk about their past and present more than their future - Members of my family set goals for their future - When making a decision with respect to my family, we examine it collectively - Members of my family set daily and weekly goals and tasks that they aim to achieve - We seek to consult each other when making personal decisions - My family members demonstrate good time management and

	scheduling. - We make a plan for the family budget and expenses
Family and Community Engagement	- My family is characterized by good relations among family members - Everyone in my family plays an important role in the affairs of the family - The family needs the efforts of every member of the family to achieve its wellbeing - We are always involved in our neighborhood special events (i.e. we have good relations with our neighbors) - In my family we visit our relatives frequently - We maintain regular contact with our relatives via phone calls - We volunteer and participate with community service organizations
Effective Parenting	- In my family, we are taught to save money - My family helps the children in choosing their friends - We care about finding good role models for the children in our family (whether historical or contemporary figures) - Our discussions are based on logic and persuasion - Members in my family are encouraged to express their opinion - My family members deal with each other with transparency - Reward and punishment are effective parenting methods in my family

Pretesting of the Family Functioning Questionnaire

Item Clarity: The Family Functioning Questionnaire was administered online and through team members to a convenience sample of 200 people (100 Egyptian and 100 Saudis) evenly split by gender and varied in terms of educational, socioeconomic and age groups. Participants were asked to read each item and note if the question intent was clear or not clear and to comment on why they thought so. The responses were reviewed and poorly worded or confusing items were dropped or clarified.

Reliability

A second, but demographically similar sample of 200 people were asked to complete the survey to assess interitem reliability. Reliability as used here refers to an estimate of internal consistency in how the study sample responded to the questionnaire

items, indicating that the items are consistently related to one another and reflect a coherent, single concept (Schutt, 2009). Cronbach's Coefficient alpha, a statistic commonly used to measure intra-item correlation , was calculated for each subscale set of items. The average alpha across the item sets was 0.79, indicating acceptable reliability.

Validity

Validity is "the state that exists when statements of conclusions about empirical reality are correct" (Schutt, 2009). In this study, construct and face validity were used to assess the validity of the Positive Families program measurement. Reviewers specialized in psychology, sociology, and public health, were provided with the main aims and concepts of the Positive Families program, and were asked to assess the questionnaire in light of the domains of the Positive Families program. Any item that received less than 80% of agreement among reviewers was removed from the survey.

Data Management and Analytic Plan

Dataset Assembly

Data management approaches were used through Microsoft Excel 2013. The Excel files were converted for use with Stata 13 for data analysis. Identifiers, such as names and email addresses, were removed from the dataset, and a unique study ID number replaced each participant's personal identifier.

Age

Age was analyzed in two forms; continuous variable as it is, and as a categorical variable. Age categories followed the Standard Population Distribution of the World Health Organization (WHO) (WHO, 2001). These include: (15-19, 20-24, 25-29, 30-34, 35-39,

40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, and 85+). Another tabulation using a wider age interval included: (15-24, 25-34, 35-44, 45 and over), to avoid very small counts in the contingency tables, if any.

Countries

Summary and detailed statistics were presented by reported country of origin.

Questions

All the 88 *items* presented in the baseline and post-program Positive Families questionnaire were treated as ordinal variables and grouped domain: *positive thinking, effective communication, safe emotional and physical environment, effective parenting, love and affection, family and community engagement, spiritual and moral values, assigning roles and taking responsibilities, planning and decision-making, cultural and academic development, problem solving, and family gathering*. Each individual had an item, domain, and total overall score, using the sum score of all questions in all domains.

Analytic Plan

Specific Aim 1

The analytic sample in Aim 1 included all the ~30,000 participants who had any formal interaction with the program.

Exploratory Question 1: Are there differences in demographic characteristics of study participants who had full, partial, or minimal engagement in the Positive Families program?

Demographic characteristics included age, age groups, gender, reported nationality, and country groups. We presented data summaries as means ± standard

deviation (SD) for continuous variables, and numbers and percentages for categorical variables. Summaries were presented for the all individuals regardless of the level of exposure to the Positive Family program. Detailed summary statistics were presented by the level of exposure (full, partial, minimal). To compare the means of continuous variables across the three levels of exposure, we used Analysis of Variance (ANOVA). To compare the frequency distributions and proportions of categorical variables across the three levels of exposure, we used the Chi-squared test. In cases where we encountered a contingency table with one or more cells with counts less than 5, we used the Fischer's exact test instead, as it is a better choice than Chi-squared test when there are small values in the cells.

Exploratory Question 2: Are there baseline differences in the 12 reported domains of family functioning that distinguish participants who had full and partial engagement in the Positive Families program?

A score for each domain was calculated by summing relevant items and an overall score was calculated by summing items across all domains. Summary statistics were presented for continuous variables as means±SD, for the total number of participants, and by the level of exposure (full and partial). To compare the means of these continuous variables across the two levels of exposure, independent samples t-tests were used.

Specific Aim 2

The analytic sample in Aim 2 include only the 381 participants who had full exposure to the intervention.

Exploratory Question 1. What impact does full engagement in the Positive Families program have on changes in reported measures of positive family functioning?

Participant scores at baseline were compared with the post-program measures to assess the impact of the intervention of the Positive Families program. Summary statistics of the overall baseline and post-program questionnaires scores were presented as means ± SD. Paired student t-tests were used to assess within participant change by comparing baseline and post-program questionnaire responses, assuming the null hypothesis for the test as the difference between the two scores equals zero.

Exploratory Question 2: How might demographic characteristics (age groups, gender, and nationality) moderate the impact of full engagement in the Positive Families program on changes in reported measures of positive family functioning?

The baseline scores were compared across the individual domains with post-program questionnaire responses to measure the impact of the intervention of the Positive Families program across age groups, gender, and nationality. Summary statistics of the overall baseline and post-program questionnaires scores, and each domain scores were presented as means ±SD. Paired student t-test was used to compare baseline to the post-program questionnaire, assuming the null hypothesis for the test as the difference between the two scores equals zero. No further tests (i.e. multi-variate analysis) were performed in answering this question since no evident effect of the available demographic variables were found by performing paired t-test.

CHAPTER 4: RESULTS

Aim 1: to characterize the reach of the Positive Families program to its intended audience in the Arab world.

Question 1: Are there differences in demographic characteristics of study participants who had full, partial, or minimal engagement in the Positive Families program?

A total of 29,981 participants registered in the Positive Families program. Of these, 28,070 were minimally engaged in the program (93.6%), 1,530 were partially engaged (5.1%), and 381 were fully engaged (1.3%).

Basic demographic information was reported by less than half of of the overall sample. 13,980 reported their gender, with more men participating in the program than women (58% vs 42% respectively). Age was reported by 12,393 participants with a mean of 25.1 years and a standard deviation of 9.4 years. Age was further broken down into categories using four groupings. 48.1% were 15 to 24 years old, 36.3% were 25 to 34 years old, 11.6% were 35 to 44, and 4% were 45 and over (See **Table 3**).

Just under 14,000 participants reported their country of origin and this represented 86, mostly Arab countries. The majority were from Saudi Arabia N=9,195 (65.8%), followed by Egypt N=1,627 (11.6%), Algeria N=503 (3.6%), Morocco N=463 (3.3%), Yemen N=287 (2.1%), Palestine N=261 (1.9%), United Arab Emirates (UAE) N=195 (1.4), Jordan N=145 (1.0%), Libya N=129 (0.9%), Iraq N=92 (0.7%), Syria N=91 (0.7%), Sudan N=79 (0.6%), Kuwait N=78 (0.6%) and Qatar N=65 (0.5%), while the rest 7.8% of the sample were from other Arab and non-Arab countries.

Table 3

Gender and Age Demographics among Participants Subgroups

		Engagement Type			Overall Reported Sample
		Minimally Engaged (n=28,070)	**Partially Engaged** (n=1,530)	**Fully Engaged** (n=381)	
Gender					
	Female	**(39.5%)** 4,855	**(58%)** 760	**(65.8%)** 248	**(42%)** 5,863
	Male	**(60.5%)** 7,439	**(42%)** 549	**(34.2%)** 129	**(58%)** 8,117
	Total	12,294	1,309	377	13,980
Age					
	Mean	24.8	27	28.5	25.1
	15-24	**49.5%** 5378	**40.1%** 480	**30.2%** 103	**48.1%** 5,962
	25-34	**35.5%** 3856	**40.1%** 480	**48.1%** 164	**36.3%** 4,501
	35-44	**11.1%** 1205	**15.1%** 181	**14.7%** 50	**11.6%** 1,438
	45 and over	**3.8%** 416	**4.7%** 56	**7.04%** 24	**4%** 456
	Total	10,855	1,197	341	12,393

A statistically significant association was found between gender and engagement type, as demonstrated by chi-square test for association $\chi 2(2) = 257.98$ $p < 0.0005$. As shown in **Table 3**, more men than women participated in the Positive Families program (58% to 42% respectively); however, a higher proportion of men were minimally

engaged than women (60.5% males vs 39.5% females) but less likely to be partially (42% males vs 58% females) or fully engaged (34.2% males vs 65.8% females) than women.

The association between the engagement level and age (both mean age and age groupings) was tested using chi-square test and one-way ANOVA. The mean age of participants was significantly different across subgroups of participants, and there was a significant association between age groups and engagement level. The mean age of participants increased with more engagement in the Positive Families program. As shown in **Table 3**, the mean age of minimally engaged participants was 24.8 years (SD=9.3), 27 years (SD=9.2) for partially engaged participants, and 28.5 years (SD=9.9) for fully engaged participants.

As further shown in the age categories in **Table 3**, participants between the ages 15-24 years represented almost half the overall sample. However, as the level of engagement increased, the percentage of participants aged 15-24 decreased, starting with 49.5% minimally engaged, to 40.1% partially engaged to 30.2% fully engaged. On the other hand, the percentage of participants in the older age categories increased as the level of engagement increased; those aged 25-34 increased from 35.5% minimally engaged to 40.1% partially engaged to 48.1% fully engaged. The 35-44 age category increased from 11.1% to 15.1% and 14.7%, while 45 years and older category increased from 3.8% to 4.7% to 7.04%. No interaction was found between gender and age across levels of program engagement ($p>0.05$).

To examine potential differences in nationality among the subgroups in the sample, Fischer's exact test was performed, and a statistically significant association was found between country of origin and engagement type $\chi 2\ (172) = 271.257$, $p = 0.001$.

Table 4 presents the differences in participants' countries of origin among the sample's subgroups. Although **Table 4** presents countries with total participants of at least 10, for the accuracy of this analysis, only differences among subgroups of countries with at least 100 total participants will be discussed.

Regardless of country of origin, the vast majority of participants were minimally engaged in the program, ranging from 81% to 93% of country-specific participants. The numbers and their relative proportion to all country-specific participants with minimal, partial and full engagement is displayed in **Table 4**. Participants from Yemen, Saudi Arabia, and Morocco comprised the highest percentages of the partial subgroup (12.5%, 10%, and 8.8% respectively), while participants from Libya and the United Arab Emirates (UAE) comprised the lowest percentage in this subgroup (3.8% and 6.7% respectively) (See **Table 4**).

Participants from Saudi Arabia comprised more than half the fully engaged subgroup n=218 (57.2%), followed by Egyptians n=74 (19.4%), Algerians n=18 (4.7%), Yemenis n=17 (4.46%) and Moroccans n=16 (4.2%). When examining participants within each country, we notice that the percentage of fully engaged participants ranged from 0.5% to 5.9% of all country-specific participants. Although the number of fully engaged participants in absolute terms were quite small outside of Saudi and Egypt, countries like Yemen, Egypt, and Jordan had the highest percentage of program completion (5.9%, 4.5%, 4.1% respectively) while the United Arab Emirates, Saudi Arabia and Libya comprised the lowest percentage of fully engaged participants (0.5%, 2.4%, 2.3% respectively).

Table 4

Country of Origin among Participants Subgroups

Country of Origin	Minimally Engaged	Partially Engaged	Fully Engaged	Total
Saudi Arabia	8056	921	218	9195
	87.6%	**10%**	**2.4%**	
Egypt	1435	118	74	1627
	88.2%	**7.3%**	**4.5%**	
Algeria	445	40	18	503
	88.3%	**7.9%**	**3.6%**	
Morocco	406	41	16	463
	87.7%	**8.8%**	**3.5%**	
Yemen	234	36	17	287
	81.5%	**12.5%**	**5.9%**	
Palestine	234	19	8	261
	89.7%	**7.3%**	**3.1%**	
UAE	181	13	1	195
	92.8%	**6.7%**	**0.5%**	
Jordan	125	14	6	145
	86.2%	**9.7%**	**4.1%**	
Libya	121	5	3	129
	93.1%	**3.8%**	**2.3%**	
Iraq	88	4	0	92
	95.65%	4.35%	0.00%	
Syria	81	7	3	91
	89.01%	7.69%	3.30%	
Sudan	67	10	2	79
	84.81%	12.66%	2.53%	
Kuwait	69	8	1	78
	88.46%	10.26%	1.28%	
Qatar	58	7	0	65
	89.23%	10.77%	0.00%	
Tunisia	44	8	0	52
	84.62%	15.38%	0.00%	
Nigeria	40	0	0	40
	100.00%	0.00%	0.00%	
Oman	34	2	0	36
	53.97%	3.17%	0.00%	
Bahrain	29	5	0	34
	85.29%	14.71%	0.00%	
Pakistan	23	1	0	24
	95.83%	4.17%	0.00%	

Lebanon	21	1	0	22
	95.45%	4.55%	0.00%	
USA	19	2	0	21
	90.48%	9.52%	0.00%	
Mauritania	15	2	1	18
	78.95%	10.53%	5.26%	
Canada	11	2	0	13
	84.62%	15.38%	0.00%	
Malaysia	12	1	0	13
	92.31%	7.69%	0.00%	
India	11	0	0	11
	100.00%	0.00%	0.00%	
Australia	10	0	0	10
	100.00%	0.00%	0.00%	
UK	9	1	0	10
	90.00%	10.00%	0.00%	

Question 2: Are there baseline differences in the 12 reported domains of family functioning that distinguish participants who had full and partial engagement in the Positive Families program?

The family functioning questionnaire was comprised of 12 scale domains. An independent samples t-test was performed to investigate baseline differences in family functioning between partially and fully engaged participants, by comparing the means of each individual domain in the questionnaire as well as a summary score across all domains. Outlier detection, normality tests, and homogeneity of variances were assessed using box plots, histograms and Levene's test for equality of variances. The t-test was considered robust after testing normality, outliers and homogeneity of variances.

The t-test results showed significant differences between partially and fully engaged participants at baseline on the overall family functioning questionnaire. As displayed in **Table 5**, partially engaged participants reported higher family functioning (M=29.5, SD=8.3) compared to fully engaged participants (M=28.3, SD=9.8) p=0.03.

When examining specific domains of the questionnaire, we found that all domains, with the exception of *cultural and academic development*, were significantly different between these subgroups. The mean scores of ten domains of the family functioning questionnaire were significantly higher for partially engaged participants compared to fully engaged participants. These domains are *positive thinking, effective communication, safe emotional and physical environment, effective parenting, love and affection, family and community engagement, spiritual and moral values, assignment of roles and responsibilities, problem solving, and family gathering*. On the other hand, fully engaged participants had statistically higher mean scores in the domain of *planning and decision making*.

The baseline differences between subgroups in family functioning mean scores by domain are shown in **Table 5.** The largest mean difference between subgroups were found in *family gathering* (M=0.16) and *spiritual and moral values* (M=0.16), whereas the lowest mean difference between subgroups were found in *problem solving* (M= 0.1) and *family and community engagement* (M=0.1).

Despite differences between subgroups, all participants who completed the family functioning questionnaire in this sample reported high scores in the *spiritual and moral values* domain (M=2.9), followed by *effective parenting* (M=2.45) and *effective communication* (M=2.42). *Cultural and academic development* (M=2.23), *family gathering* (M=2.28), and *planning and decision making* (M=2.30) were the lowest reported domains of family functioning among participants in the sample.

Table 5

Baseline Family Functioning Questionnaire Scores among Fully and Partially Engaged Participants

Domain		N	Mean	SD	Mean Diff.	P Value
Overall Score	Partial Engagement	1530	29.5	8.3	1.2	0.03
	Full Engagement	380	28.3	9.8		
Safe Physical and Emotional Environment	Partial Engagement	1530	2.5	0.80	0.13	0.003
	Full Engagement	380	2.4	0.62		
Cultural and Academic Development	Partial Engagement	1530	2.3	0.95	0.06	0.289
	Full Engagement	380	2.2	0.79		
Love and Affection	Partial Engagement	1530	2.5	0.87	0.15	0.004
	Full Engagement	380	2.3	0.90		
Roles and Responsibilities	Partial Engagement	1530	2.5	0.91	0.14	0.008
	Full Engagement	380	2.3	0.85		
Positive Thinking	Partial Engagement	1530	2.5	0.88	0.14	0.005
	Full Engagement	380	2.3	0.78		
Problem Solving	Partial Engagement	1530	2.2	0.91	0.10	0.041
	Full Engagement	380	2.1	0.84		
Family Gathering	Partial Engagement	1530	2.4	0.86	0.16	0.001
	Full Engagement	380	2.2	0.74		
Effective Communication	Partial Engagement	1530	2.5	0.93	0.15	0.004
	Full Engagement	380	2.4	0.83		
Spiritual and Moral Values	Partial Engagement	1530	3.0	0.90	0.16	0.002
	Full Engagement	380	2.8	0.73		
Planning and Decision Making	Partial Engagement	1530	2.3	0.83	-0.26	0.000
	Full Engagement	380	2.5	0.80		
Family and Community Engagement	Partial Engagement	1530	2.5	0.86	0.10	0.040
	Full Engagement	380	2.4	0.75		
Effective Parenting	Partial Engagement	1530	2.5	0.96	0.14	0.010
	Full Engagement	380	2.4	0.87		

Since more than half of the sample were Saudis, we further investigated differences between Saudis and non-Saudis in reported baseline family functioning. Among the fully engaged subgroup, participants from Saudi Arabia (N=216) scored higher (M=29.8, SD=9.5) than non-Saudis (N=164) (M=26.4, SD=9.9), with a mean difference of (M=3.3, SE=1), $p<0.001$. Among the partially engaged participants, non-Saudi participants (N=608) scored higher (M=30.5) than Saudis (N=921, M=28.8) with a mean difference of (M=1.7, SE=0.42) $p<0.005$.

AIM 2: to explore the impact of the Positive Families program on reported domains of positive family functioning.

Question 1: What impact does full engagement in the Positive Families program have on changes in reported measures of positive family functioning?

The impact of Positive Families program was assessed by examining the difference between baseline and post program measures in overall score and in the individual domain scores of the questionnaire. A paired sample t-test was performed using linked pre and post-program questionnaires. As shown in **Table 6**, participants who fully engaged in the Positive Families program scored higher in the overall post-program questionnaire (M = 38.5) relative to scores on the baseline questionnaire (M = 28.3). These results were statistically significant ($p < .001$), with a mean increase of 10.2 (SD = 10.5).

Table 6
Baseline and Post-program Family Functioning Questionnaire Scores among Fully Engaged Participants

Domain		Mean	Mean Diff.	SD	t-value	DF	P Value
Overall Questionnaire score	Post-program Baseline	38.5 28.3	10.2	10.5	18.9	379	0.000
Safe Physical and Emotional Environment	Post-program Baseline	3.2 2.4	0.8	0.9	17.1	379	0.000
Cultural and Academic Development	Post-program Baseline	3.1 2.2	0.9	1.0	17.8	379	0.000
Love and Affection	Post-program Baseline	3.2 2.3	0.8	0.9	17.4	379	0.000
Roles and Responsibilities	Post-program Baseline	3.3 2.3	0.9	1.0	18.5	379	0.000
Positive Thinking	Post-program Baseline	3.2 2.3	0.9	0.9	17.6	379	0.000
Problem Solving	Post-program Baseline	3.1 2.1	0.9	0.9	20.2	379	0.000

Family Gathering	Post-program Baseline	3.1 2.2	0.8	0.9	17.4	379	0.000
Effective Communication	Post-program Baseline	3.2 2.4	1.0	0.9	18.3	379	0.000
Spiritual and Moral Values	Post-program Baseline	3.5 2.8	0.7	0.9	15.4	379	0.000
Planning and Decision Making	Post-program Baseline	3.3 2.5	0.7	0.9	16.8	379	0.000
Family and Community Engagement	Post-program Baseline	3.2 2.4	0.8	1.0	17.2	379	0.000
Effective Parenting	Post-program Baseline	3.2 2.4	0.9	1.0	17.5	379	0.000

Table 6 shows that fully engaged participants scored significantly higher on post-program assessments of family functioning across all domains ($p<0.0005$), with mean differences ranging between 0.7 and 1.00. The largest mean difference was found in *effective communication* (M=1.00), while the smallest difference was found in *planning and decision making* and *spiritual and moral values* (M=0.7).

Among the fully engaged, non-Saudi participants had a significantly higher change score (M=13.6) than Saudi participants (M=7.6) with a mean difference of 5.9 ($p<0.005$). To further investigate the increase in reported family functioning among participants, we stratified participants based on their baseline scores across tertiles and performed ANOVA on the difference between post-program and baseline measures. We found significant differences across the tertiles ($p<0.05$) (**Table 7**). Specifically, participants in the lowest percentile at baseline had the largest change scores in relation to post-program measures (M=19), participants in the middle percentile had the next largest difference (M=8.9), and participants in the upper percentile had the smallest difference (M=2.7).

Table 7

Percentiles of Participants Mean Difference

	N	Mean Difference	Standard Deviation	Standard Error
Top tertile	128	2.7	4.2	0.37
Middle tertile	126	8.9	5.8	0.52
Bottom tertile	126	19	11.8	1.0
Total	380	10.2	10.5	0.53

Question 2: How might demographic characteristics (age groups, gender, and nationality) moderate the impact of full engagement in the Positive Families program on changes in reported measures of positive family functioning?

Participant gender, age and country of origin were examined as possible moderators of the impact of full engagement in the Positive Families program on changes in reported measures of family functioning. Paired t-test was performed to compare scores for each of the baseline domains to the post-program questionnaire scores across age groups, gender, and nationality. Age was categorized into five groups to better investigate possible moderating effects.

There were no evident effects of participant gender or age on scores; differences between baseline and post-program scores were significant for participants regardless of their gender or age group. Country of origin did moderate the impact of full engagement on a few domains of reported family functioning among participants from Morocco, Yemen, Palestine, UAE, Syria, and Sudan. However, as the number of participants in these countries was less than 20 (Table 4), this impact cannot be readily interpreted.

CHAPTER 5: DISCUSSION

The Reach of the Positive Families Program

Media interventions are characterized by their wide scope and reach; nearly 30,000 participants, coming from eighty-six countries participated in the Positive Families program in some way. The magnitude of interest in the program across much of the Arab world, reflected by numbers of participants, website visits, videos sent to the program for broadcast as part of competitions, and the media coverage may reflect both the appeal of the program's media-based approach as well as the message focus on family functioning.

We designated participants as minimally engaged if they took the time and initiative to register for the program. We consider the act of registration to reflect exposure and positive interest in the program. As noted, formal program activities were time consuming and spanned several months, and while we do not know the extent to which minimally engaged participants may have continued their interest in the program by informally engaging with the program by watching at least some of the broadcasts, we suggest that it is likely.

Only a small percentage of participants (n= 381; 1.3% of those registered) completed the intense schedule of program activities. We believe that this distinct and very small subgroup of people can be thought of as program champions, a small cadre of committed individuals from 12 Arab countries sufficiently motivated to undertake a demanding series of program activities over a four month period. These activities include closely following weekly program episodes and online submission of written reflections.

Participants were also encouraged to participate in online discussions organized around program themes, participation in contests, including the submission of a positive family video for broadcast, and the submission of a family project proposal at the end of the program.

The project evaluation demonstrated that these "champions", and their families, directly benefitted from their participation as evidenced by positive gains across almost every domain of family functioning measured. Program promoters and supporters, who represented a larger segment of participants with partial and minimal engagement in the program, also appeared positively drawn to the Positive Families program. We believe that the program benefit derived from the engagement of these champions, promoters and supporters was critical to the popularity of the program and its broad appeal to the millions of program viewers through both direct and indirect exposure pathways.

Finally, while not counted, we speculate that there was a population numbering in the millions across all regions of the Arab world that were exposed to the Positive Families program. The program was announced through a multi-country campaign in the Arab region with program promotion in newspapers, TV, Internet, and other forms of printed materials. Five newspaper articles and a half a page colored advertisement appeared in the Al-Riyadh newspaper. The online banner references to the program that were displayed more than 81 million times on fifty Arabic websites, the average number of 18,152 website visits each day and a total of 952,918 downloaded materials, as well as 100,000 brochures and 200,000 phone text messages sent to promote the program.

Differences in demographic characteristics of study participants who had full, partial, or minimal engagement in the Positive Families program

Although Positive Families attracted both men and women; men were more likely than women to initially register for the program but also less likely to continue formal involvement. We note, however, that demographic characteristics were reported by less than half of the overall sample and were missing for many of the minimally engaged participants.

Because of this missing data, we are cautious about over-interpretation of findings regarding gender differences in participation rates. Nevertheless, previous studies found that fathers are considerably less engaged in family oriented programs than women. For instance, a meta-analysis of parenting programs that targeted both mothers and fathers, found that fathers comprised only 20% of the 4,959 participants in twenty-one studies across numerous countries (Fletcher et al., 2011). Furthermore, Smith and others (2012) found that fathers' participation in educational child maltreatment prevention programs at a 30% lower rate than mothers. It was suggested by the study authors that men avoid seeking formal support because they perceive social services to be untrustworthy, unattractive, and unkind towards fathers (Stahlschmidt et al., 2013). Men's perception of masculinity may equate weakness with seeking support (Summers et al., 2004). These findings are consistent with the lower percentage of active involvement of male relative to female participants in the Positive Families program. Nevertheless, the large percentage of men registering for the program suggests that Arab men are willing to publically acknowledge interest in a family functioning program. It is also possible that at

least some of the men who registered, but did not continue program activities, encouraged their wives or daughters to register and participate on behalf of the family.

A possible explanation for higher female engagement is consistent with assigned gender roles in Arabian societies. Despite differences among Arab societies on a number of social, economic and legal dimensions, gender and family expectations are largely consistent across most Arab region. Traditional gender roles view women as caregivers and homemakers, and men as breadwinners dictating family and work responsibilities within the family (Schreiber, 1998). Consistent with these expectations, women are often confined to the home and less likely to be involved in the formal workforce than men (UNDP, 2003). Consequently, participation in program activities that are performed at home (e.g. watching TV and using the internet) are more easily managed by women than men.

On average, participants in this study were in their mid to late twenties. As engagement in the program increased, so did participant age, (from 24.8 to 27 to 28.5 years); half of the minimally engaged participants were younger than 25 years old, about half of the fully engaged participants were between mid-twenties to mid-thirties. This shift to older age groups with higher engagement levels may reflect an interest and high level of comfort among younger participants to use interactive social media, making them more enthusiastic than older groups to register in this program, especially with 77% of social media users in the Arab world being youth (Go Gulf, 2013). However, older age groups might be more motivated to continue their participation in this intense family functioning program since they are more likely to be married, have their own family, and

therefore have a vital role and responsibility in increasing the levels of their family functioning.

Participants came from eighty-six countries, reflecting the wide coverage of Positive Families program especially in the Arab world with participants from both Arab and non-Arab countries. Saudis comprised the almost half of all participants, probably because the TV channel that aired the Positive Families program was based in Saudi Arabia.

Saudi Arabia is among the leading countries in the Arab world in regard to culture, religion, and entertainment and is one of the largest, wealthiest, and respected countries in the region. Media channels that originate in Saudi are widely viewed and influential. The current largest and most leading private media company in the Arab world is the MBC group. The influence of Saudi broadcasting is likely to have conferred the Positive Families program special standing among Arab families. The language used in the program (both in the talk show and online website) was classical Arabic, a dialogue that is mostly understood across the Arab world. The wide reach of the program across numerous countries may also be enhanced by the multi-cultural background of the Positive Families team. Team members came from multiple, mainly Arab, countries such as Egypt, Sudan, Jordan and Somalia.

Baseline differences of family functioning between fully and partially engaged participants

Partially engaged participants demonstrated higher baseline levels of family functioning relative to those who completed the program across most domains of family functioning. The baseline assessment may have acted to reassure partially engaged

participants that their families were already functioning well and thereby undermine an expectation of deriving additional program benefit with continued engagement. In contrast, the lower family functioning levels of participants who ultimately completed the program might have acted as a motivator to participants to complete the program.

It is interesting to note that despite its length and intensity, participants who completed the Positive Families program scored higher than others in *planning and decision making*, suggesting that it may have been these skills that facilitated their ability to complete program assignments.

Reported baseline family functioning among partially and fully engaged participants (N=1,910) showed that the domain with the highest reported scores were related to *spiritual and moral values*, indicating that religious values and practices are considered a core element of family functioning in the Arab region. The domain of *cultural and academic development*, was the lowest reported domain, reflecting lower consensus regarding its centrality to family functioning.

The Impact of the Positive Families Program

The Positive Families program was associated with a significant increase in family functioning scores close to one point on a 5-points Likert scale, a potentially meaningful impact, for fully engaged participants. Moreover, based on the limited sociodemographic information available on participants (i.e. gender, age and country), there were no evident effect of these characteristics on program impact, suggesting that participants benefited regardless of age, gender or country of residence. These findings suggest that the media-based interventions have the potential to increase and enhance

family functioning in the Arab population. We can only speculate on specific elements of the Positive Families program that may have contributed to higher levels of functioning among families, but we have identified a number of program features that can plausibly be linked to positive effects, including the interactive approach taken by the program designers, contests, financial rewards, family modeling and cultural sensitivity which are all likely features of program success. Some of these features are understood within the context of Social Cognitive Theory (Bandura, 1986) such as self-regulation through contests and interactive approaches, incentive motivation through financial rewards, and observational learning through family modeling, as briefly elaborated below.

The interactive web-based approach

The interactive participatory approach was a significant feature that attracted family members not only to watch the Positive Families TV episodes but to become part of a community that creates connections and provides resources for learning and social support. Incorporating interactive approaches and social media channels in public health programs can lead to a shift in the communication equation from a "top-down, expert-to-consumer approach to a nonhierarchical, dialog-based approach" (Albalawi & Sixsmith, 2015). Using this approach, family members were empowered to actively engage in the program by participating in the online forum's learning, discussions and support, and by sharing videos of their own families that were aired on TV. Online posts, discussions and comments by both Positive Families team members and participants have provided feedback, social support, and self-monitoring (a person's systematic observation of his/her own behavior), which are vital means to achieve self-regulation (Bandura, 1997).

Contests

Studies have shown that incorporating contests and competitions in health promotion programs encourage active participation (Merzel & D'afflitti, 2003). Contests offer positive outcomes and rewards that help reinforce goal-setting and self-reward, leading to higher levels of self-regulation (Bandura, 1997). Contests were key strategies of the Positive Families program incorporated into the program at multiple stages: the main contest between participants, in which results were announced at the end of the program, in addition to weekly short-video contests that were open to the general audience. Incorporating contests in Positive Families among participants at the completion of the program and on weekly basis may have attracted audience, increased engagement, and offered a sense of competition and celebrity among participants. Additionally, as contestants were urged to tell their friends and family about a program they are engaged in, this may have helped promote and build a community of family members. A casual review of participants' online forum discussions in Positive Families website showed that participants were collaborative in helping each other with the required weekly feedback, sharing family functioning materials, and supporting those who were facing familial obstacles. Contests in Positive Families were designed in a way that encouraged families to improve their functioning and compete against themselves by evaluating their improvement throughout the program. A sense of collective unity, belonging and loyalty were developed among participants, which is consistent with previous findings of using contests in public health programs (Glover et al., 2013).

Family modeling

One of the central concepts of Social Cognitive Theory is observational learning, often accomplished through mass communication. Studies have shown that observers imitate models most frequently when they perceive these models to be similar to themselves (Schunk, 1987). In addition, people are believed to favor communication sources that are similar to themselves (Kreuter & McClure, 2004). The visibility of program participants' contribution to program materials, for instance, in short family videos, the online narratives and the TV show call-ins, are likely to have been perceived and appreciated by the audience. In fact, we believe that it is this element of the program design that contributed authenticity and relevance to broadcasts. It is also communicated that background similarities, such as age, race, family structure, place of residence and others are believed to enhance liking and trusting in a source (Fleming & Petty, 2000; Marsden, 1988). Perceived attitudinal similarities, which include views of shared values, feelings, opinions, or beliefs, are also believed to increase attractiveness and trust between model and observer (Simons et al., 1970).

The Positive Families program provided a platform for families who speak Arabic and share similar familial structures and communication styles to be models for other families. Real stories of families who strive to increase their functioning and improve their relationships in gradual, realistic steps were told and experienced throughout the program. These similarities between models and observers are believed to have created a culture of trust and respect, and contributed to achieving desired behavioral changes related to family functioning.

Financial rewards

Reinforcement through financial incentives and tangible rewards to achieve health related behavior change has been supported by a number of reviews (Sutherland et al., 2008; Giles et al., 2014; Mantzari et al., 2015) as they can be more powerful than providing knowledge and less restrictive than regulation (Marteau et al., 2009). Tangible and financial prizes were used to promote the Positive Families to the Arab audience during and at the completion of the program, reaching more than 500,000 Saudi riyals ($133,000). Examples of the tangible prizes include a piece of land, a car, smart phones, and merchandise coupons. Online registration was not required to enter short video contests and possibly win weekly prizes, giving any of the families in the audience the opportunity to participate and win. These valuable tangible rewards are anticipated to have played a vital role attracting participants to engage in the Positive Families program, especially the younger groups who were heavily engaged at the beginning of the program. Near-immediate and guaranteed rewards for health behaviors are hypothesized to change the reward structure of these behaviors, the structure of health gains being often delayed and uncertain. Changing this reward structure makes healthy behaviors more attractive (Giles et al., 2014). This suggests an explanation of the large numbers of younger groups of participants (i.e. 15 to 24 years old) who participated in the program. Although it is difficult for public health campaigns to provide valuable financial incentives, the vision and goals of the Positive Families program were discussed with a number of private funders, both Saudis and non-Saudis, who generously sponsored the program throughout its implementation.

Cultural sensitivity

The cultural features of any given group may be directly or indirectly associated with health-related priorities, choices, behaviors, and with acceptance and approval of health education and health communication programs (Pasick et al., 1996). Consequently, receptivity to health communication interventions is enhanced when their design is consistent with the cultural beliefs and practices of target populations (Thomas et al., 2004). The incorporation of a sociocultural approach to the Positive Families program in which beliefs, norms and behaviors of Arab families were acknowledged and reinforced in the program's content and health messages was a likely driver of its popularity.

Sociocultural approaches provide context and meaning to health messages and make them more effective and persuasive (Kreuter & McClure, 2004; Gächter & Herrmann, 2009). This was especially challenging given the wide-ranging cultural backgrounds of Arab societies. However, the program was focused on the fundamental societal features and dynamics that tie Arab families together despite their vast geographical origins. Examples of these features include the style of communication among family members, the collective culture, and the significance of religion. The program would not have reached its mass audience without considering main characteristics of Arab families, their values, and loyalties.

Although modern, and sometimes challenging, concepts of family functioning, child rearing, and couples' relations were introduced throughout the Positive Families program, careful attention was paid to Arabian cultural perceptions of family dynamics and health-related familial beliefs. Being culturally sensitive is believed to have increased openness to these modern concepts, and we think contributed to the enhancement of

family functioning among Program participants. Examples of sensitive topics include child sexual abuse and how to deal with family stigma and shame, time out as opposed to physical punishment as an effective way of shaping child behavior, and expressing care and love in verbal ways within the context of a conservative society. During the program, cultural practices associated with sensitive issues were first acknowledged and discussed, then challenged through supporting literature and real life examples. Alternatives were finally introduced in a sensitive way that was respectful of traditional practices of families in the Arab region.

This sociocultural approach was also reinforced through the multicultural team that developed the Positive Families program. Team members came from Egypt, Jordan, Sudan, Somalia and Saudi Arabia. One of the advantages of initiating a program in Saudi Arabia is the fact that the country attracts young professionals from numerous Arab countries to work in Saudi due to the rapid growth, advanced economy and work opportunities available in the kingdom. The multicultural backgrounds of program staff provided distinctive input and viewpoints that represent cultural settings of Arab countries in north Africa, Levant countries, in addition to the Arab states of the Gulf.

Another advantage of the Positive Families program initiation in Saudi Arabia was fully engaged Saudi participants starting the program with higher reported levels of family functioning, and having higher change scores compared to non-Saudis. This can be explained, at least in part, by the popularity of the program in Saudi, where the program is watched, discussed and covered by the press and social media outlets. The challenge, due to extensive exposure, was less for Saudis compared to non-Saudis to become champions and change themselves and their families to the better. Non-Saudis,

on the other hand, may have had more competition in becoming a champion of the program since the program was less popular, with less indirect pathways to behavior change, which possibly required more efforts from them and their families to transform and increase their functioning.

Strengths and Limitations

This study makes a contribution to a largely unexamined literature to date addressing media-based family interventions in the Arab region. The Arab population is under pressures of modernity and globalization, in addition to facing social, economic, and health-related challenges. The implementation of the Positive Families program filled a gap in this literature in several ways. The program targeted the family as a whole, instead of focusing on parents, women or children solely. It also has provided insights into family functioning interventions, specifically exploring differences in participants' demographic characteristics. The design of the program which included baseline and post program measures provided an evaluation of the change in family functioning levels among participants. Moreover, the Positive Families program incorporated a sociocultural approach in which Arab families' beliefs, norms and behaviors were acknowledged and reinforced in the program's content and health messages, making it more effective and persuasive. In addition, the large sample size of this study provides a reasonable presentation of Arab individuals who have access to TV and the Internet. This large sample size is also expected to limit the influence of extreme observations or outliers. Furthermore, evaluating the effectiveness of Positive Families will help guide funding allocations, support advocacy, and determine future needs, especially that the significance of research in the Arab world has somewhat improved in the past few

decades. This progress is reflected in several universities and research centers currently focusing on the publication and documentation of research studies.

The study is also subject to a number of limitations. Among these are the use of secondary data; some data that would have enriched the evaluation were not collected. These include data on demographic characteristics such as socioeconomic status, number and age of children in the family, educational level of participant, educational level of parents, income level, and residence (urban vs. rural). In addition, information is lacking on the exposure and engagement of participants, for instance the number of episodes watched, number and quality of submitted weekly feedback, and online activity, data on theoretical constructs that are linked to behavioral change such as attitudes, social norms, self-regulation, and self-efficacy, data on program features that participants found to be most effective, and data on program's long term effects. In addition, the family functioning domains were set, and the measurement scales and the scripts of the broadcasted episodes were designed based on these domains. Moreover, the vast majority of families who were exposed to the Positive Families but did not participate in the online components were not subject to evaluation. Furthermore, demographics were not reported by a large percentage of minimally engaged participants, limiting the analysis to those who chose to report this information. The study is also subject to income bias, since participation in the program required having access to the internet at home, excluding the lowest income families in the society from being represented in the sample.

Finally, the before-and-after one group research design raises validity threats whereas a randomized trial would not. Examples of these threats are self-selection, where participants who choose to be in the program are likely to be more motivated to improve

their families compared to the rest of the population. Another threat is the maturation of subjects. Since the program was ongoing for four months, it is possible that changes in functioning among participating families are affected by factors that are not related to the program. Historical changes and external events unrelated to the program, such as other family or parenting community programs, can also influence families' functioning. In addition, having a control group would have allowed for comparisons between the intervention and control groups to better assess the impact of the program. Despite these design limitations, a before-and-after one group design is commonly used for media-based studies where exposure cannot be restricted to population subgroups and when a randomized trial is impractical.

Recommendations for Stronger Design and Evaluation Plan of the Positive Families Program

Our assessment of the Positive Families program was restricted by limitations of secondary data analysis. If I were able to redesign the Positive Families program, given the promise of this work and the advances of media evaluation methods, I would recommend a number of design changes to better evaluate program reach and effects, while maintaining its appeal among the Arab audience.

The addition of formative research could be useful in possible redesign of the domains of the positive families, particularly an expansion of family functioning constructs. This would include a review on the literature on family functioning constructs, family functioning and parenting scales, and family functioning programs. In addition, focus groups of Arab parents and family members would be conducted to

explore their values, attitudes and beliefs around family functioning and explore topics they believe to be essential for discussion in such programs.

A wider range of demographic characteristics would be collected to provide a better understanding of participants' background and explore possible relations between these demographics and family functioning. Examples include indicators of socioeconomic status, number and age of children in the family, educational level of participant, educational level of parents, marital status of parents, income level, residence setting (urban vs. rural), relationship to child (mother, father, stepmother, and stepfather), whether the family had sought professional help with family issues or participated in previous parenting or family programs.

Moreover, changes in population targeting may be reasonable; for instance, the effectiveness of the program may be enhanced if sensitivity to Arab sub-cultures were addressed. The Positive Families program could be redesigned to target parents instead of all family members. Targeting parents in this program would make it more effective as it would focus on topics related to parental outcomes including parenting styles and child behavior problems. In addition to focusing on parents, the program can target a specific Arab country instead of the Arab region, where families would have more societal features and environmental circumstances in common. These shared features would increase the cultural sensitivity of the program as design would be more consistent with the cultural beliefs and practices of the target population in that Arab country, leading to an enhanced receptivity among its participants (Thomas et al., 2004).

A possible alternative design to the Positive Families program is a quasi-experimental two group design, where the program would exclusively be delivered

through online platforms with no television components to allow for controlled exposure and comparisons between the intervention and control groups. Parents would be recruited then randomly assigned to either intervention or waitlist control group. Program questionnaires, episodes, and activities would be administered online.

Additional data would be collected to enrich the evaluation of the Positive Families program. For instance, data on the long-term effects of the program, where questionnaires would be administered six months after completing the intervention. In this case questionnaires would be completed at three points in time not only two: pre-intervention, post intervention and at a 6-month follow up. Post intervention questionnaires would have an additional section to assess participants' reaction and feedback of the program.

Furthermore, data on participants' exposure and level of participation in the program such as the number of episodes watched, number of weekly feedback submissions, online forum activity and time of drop out could be tracked and analyzed to enhance our understanding of participants, their exposure and dose response effects.

Given the design of the Positive Families program, which included television and online platforms, several approaches could be taken to assess the exposure of the general audience who watched the TV show, in addition to the engagement of online active participants. One of the methods used to assess traditional media exposure is conducting population surveys (Storey et al., 1999; Rutten et al., 2009; Emery at al., 2014) where a sample from the audience is generated to get an estimate of the number and characteristics of viewers who were exposed to that specific media show, and explore the effects of program exposure on viewers' knowledge, attitudes and behaviors through both

direct and indirect exposure ways. Several approaches are used in conducting these population surveys including online surveys (Emery at al., 2014) and telephone or cell phone surveys (Rutten et al., 2009).

Other methods using today's technology to gather information on television viewers through audience measurement tools that automatically monitor television viewing could be used. In general, these instruments provide information on channels being viewed, programs and shows being carried on these channels during the viewing time and even information on viewers watching these programs. Television audience measurement systems usually use set meters, which are small devices connected to televisions in selected homes in the general population. These meters provide information on shows watched on television channels, but do not provide information no viewer demographics. People meters, on the other hand, provide additional information on household members who are watching TV, through a manual logging system to identify which member is watching during each viewing session (Green, 2011; Skelin, Grujić & Bonković, 2014). Since these audience measurement systems already exist in many countries around the world, media based public health programs can benefit from their existence in channels that air these programs. An example of measurement systems implemented in the Arab world is the television audience measurement system implemented in the United Arab Emirates (UAE) since 2012, which uses television ratings point, a measure of viewership of particular TV shows and programs (Hamid, 2014). The Positive Families program could use such existing systems to evaluate viewership and effect of program among the general audience.

In addition, several evaluation metrics can be used to better assess the exposure, reach, and engagement level of participants in the online platforms of the Positive Families program. Examples of these metrics are the number of visits, number of comments, frequency of favorites, downloads and uploads, the number of times a post, link or video is shared, the number of people participating in discussions, and demographics of participants (Neiger et al., 2012). These data generated from the Positive Families website and online forum would be used to measure participants' engagement: how many people are influenced, how much participants influence each other, and the influence of an individual network. Depending on the complexity of analysis required, analytic tools to measure these metrics can either be available with no charge at some websites or applications, or through third-party programs (Neiger et al., 2012).

Some of these metrics were measured in the Positive Families program, such as the number of website visits and the number of downloads during the implementation period of the program. However, more metrics on the website's forum and resources, in addition to participants' online activities and engagement levels would enhance our assessment of the reach of the program.

Recommendations and Implications for Interventions and Future Research

There are 10 key recommendations for future efforts in the field of family interventions that emerge from the findings of this study.

First, and perhaps most obvious, the great majority of programs that support families, couples, and children in the Arab region are not evaluated. There is a need to

identify which program components are most critical to success and which should be replicated.

Second, early cooperation between intervention developers and researchers will not only assure design accuracy, data availability, and sample representativeness, but will also provide a better understanding of possible factors and mechanisms that lead to program effects either through qualitative or quantitative data.

Third, accurate collection, documentation and storing of program's data such as participants' background information, program's activities, exposure levels, and outcome measurements can enhance the quality and utility of evaluation data and extend assessment to outcomes of efficiency and cost effectiveness of its activities.

Fourth, organizations that implement family oriented programs in the Arab region should not only recognize the value of program evaluation for future interventions but be willing to support evaluation efforts financially.

Fifth, the incorporation of social science theory into the design of family oriented programs should also be clearly outlined and tested, in order to understand which programs work and why.

Sixth, community organizations in the Arab region can benefit from partnerships with researchers and scholars in the fields of public health and social sciences for a better selection and implementation of theoretical bases in family interventions.

Seventh, Teams with multicultural backgrounds can enhance cultural sensitivity through their input on cultural beliefs and practices that are similar to target populations, which contributes to the widespread appeal of family programs and make their messages more effective and persuasive.

Eighth, Intensity and length of programs can also be modified in future programs to encourage participation and completion rates among participants.

Ninth, the incorporation of the internet and its social media channels can not only be used to attract and recruit participants to family oriented programs, but also provide a platform for participants to learn, interact and start a community no matter where they reside.

Finally, a combination of assessment methods, such as reported family functioning from all members of the family instead of one member, public opinion polls, and a representative sample survey from the audience, can better assess the reach and effect of family oriented media-based programs.

Conclusion

The Positive Families program is a promising model for future public health interventions designed to increase family functioning. The program demonstrated that a platform that combined social and mass media channels is a promising delivery vehicle in the Arab World.

The Positive Families program also delivered cultural appropriate and relevant information to viewers in the Arab world. Family programs and interventions should continue to learn and improve to meet the changing needs and circumstances of Arab families, especially during this period of accelerated change and revolutionary transformation.

My experience with the Positive Families program has been a journey that started with being an internal program staff person, working with families, youth and community

organizations, and ended with being an external researcher, examining the reach and effects of the program. The Positive Families program is one of several public health programs implemented in the region without evaluation or assessment of any kind.

I hope that this dissertation demonstrates the benefits that can be derived from systematic evaluation in efforts to improve future programing and ultimately the well-being of families.

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APPENDIX 1

The Positive Families Questionnaire in Arabic

أخي الفاضل، أختي الفاضلة

في البداية نود أن نعبر لكم عن خالص شكرنا لمشاركتكم الصادقة.

فيما يلي بعض العبارات التي تدور حول شخصيتك ومدى فهمك لنفسك، اقرأ هذه العبارات جيداً ، وأجب عنها وفقاً لما يعبر عن وجهة نظرك وشخصيتك وسلوكياتك في الوقت الحالي وذلك بوضع علامة ( ) أمام العبارات كالآتي :-

- تحت خانة (دائماً) إذا كانت العبارة تنطبق عليك دائماً.
- تحت خانة (غالباً) إذا كانت العبارة تنطبق عليك بدرجة كبيرة.
- تحت خانة (أحياناً) إذا كانت العبارة تنطبق عليك فى بعض الأحيان.
- تحت خانة (قليلاً) إذا كانت العبارة تنطبق عليك بدرجة قليلة.
- تحت خانة (أبداً) إذا لم تنطبق عليك العبارة تماماً .

- لا يوجد زمن محدد للإجابة ، وليست هناك إجابات صحيحة وأخرى خاطئة.
- علماً بأن النتائج سرية ولا يطلع عليها سوى أنت فقط.
- رجاء الإجابة على كل العبارات.

وشكراً على حسن تعاونكم وصدق إجاباتكم.

مركز حلول للاستشارات والتدريب

الاسم : (اختياري) : السن :

النوع : الدولة :

الحالة الاجتماعية (متزوج – أعزب) :

مستوي التعليم :

م	العبارات	دائماً	غالباً	أحياناً	نادراً	أبداً
1	أرى أن أسرتي أسرة إيجابية					
2	عند حل مشكلة ما، نقوم بتحديد عناصرها الأساسية وتجزئتها					
3	تتميز أسرتي بالعلاقات الطيبة بين أفرادها					
4	تتصف أسرتي بوجود حوار بين أفرادها					
5	أسرتي تعلم أفرادها الادخار					
6	للأب في أسرتي دور واضح في توجيه وتربية الأبناء					
7	نتناول الفاكهة أو الخضار في وجباتنا اليومية					
8	يحرص أفراد أسرتي على التفوق الدراسي					

9	يستمتع أفراد أسرتي بالجلوس سويا لمناقشة مواضيع تهمنا جميعا					
10	تتردد كلمة "أحبك" بين أفراد أسرتي					
11	يحرص أفراد أسرتي على أداء الصلوات الخمس					
12	يغلب على أفراد أسرتي الحديث في ماضيهم وحاضرهم أكثر من مستقبلهم					
13	يركز أفراد أسرتي على تنمية الإيجابيات ومعالجة السلبيات					
14	عند وجود مشكلة أو موقف معين نهتم أولا بجمع المعلومات عنه					
15	يلعب كل فرد في أسرتي دورا مهما في شئون العائلة					
16	يتصف أفراد أسرتي بالصدق					
17	تساعد أسرتي أبناءها في اختيار الأصدقاء					
18	تعطي أسرتي الفرصة للأبناء لتولي ميزانية المنزل في فترة محددة					
19	حين تحدث مشادة في الأسرة، يحرص أفراد أسرتي على احترام كرامة الآخرين ومشاعرهم					
20	نتابع البرامج العلمية التي تعرض على التلفاز أو الانترنت					
21	يفضل أفراد أسرتي قضاء معظم الوقت مع أصدقائهم خارج المنزل					
22	تحدث في بعض الأحيان مشكلات أو مشادات بين أفراد أسرتي					
23	العناق والتقبيل أحد وسائل التعبير عن المحبة بين أفراد أسرتي					
24	يرجع/يتحاكم أفراد أسرتي إلى تعاليم الإسلام في اتخاذ قراراتهم					
25	يضع أفراد أسرتي أهدافا لمستقبلهم					
26	لدينا بعض العقبات التي لا نستطيع اجتيازها					
27	عند حدوث مشكلة نقوم بطرح حلول عديدة ونختار أفضلها					
28	تحتاج الأسرة لمجهود كل أفرادها في مسيرتها الحياتية					
29	نتجنب الحوارات السلبية التي لا فائدة منها					
30	تهتم أسرتي بإيجاد قدوة صالحة للأبناء (معاصرة أو تاريخية)					
31	يقوم أحد الوالدين أو الأخوة الكبار بمتابعة الأبناء في دراستهم واستذكارهم					
32	يمارس أفراد من أسرتي الرياضة عدة مرات في الأسبوع					
33	يحضر أفراد أسرتي المحاضرات والندوات الثقافية					

34	نسافر في الإجازات سويا					
35	نتشارك معلوماتنا وأحداث حياتنا الشخصية في أسرتي					
36	يعين أفراد أسرتي بعضهم البعض على تطبيق التعاليم الإسلامية					
37	عند اتخاذ قرار يتعلق بالأسرة نقوم بفحصه جيدا بشكل جماعي					
38	تحاول أسرتي الاستفادة وأخذ العبرة من كل حدث يمر بها حتى لو كان سيئا					
39	نأخذ وقتا مناسبا للتفكير في أي مشكلة					
40	تشارك أسرتي باستمرار في المناسبات الخاصة بالجيران					
41	نعتمد في حواراتنا على الإقناع والمنطقية					
42	تحث أسرتي على التعاون والمنافسة الشريفة					
43	للأخ الأكبر/ الأخت الكبرى دور كبير في إرشاد الأبناء الأصغر سنا					
44	يستخدم الضرب كوسيلة للتربية في أسرتي					
45	في بعض الأحيان تحاول أسرتي الظهور بشكل مقبول اجتماعيا في مواقف على غير حقيقتها					
46	تحتل المواضيع الثقافية جزءا من حواراتنا العائلية					
47	يجتمع جميع أفراد أسرتنا مرة في الأسبوع على الأقل لقضاء وقت عائلي					
48	يسود الإحساس بالتفهم بين أفراد أسرتي					
49	نشاهد/نستمع البرامج الدينية على التلفاز/الراديو/الانترنت					
50	لأفراد أسرتي أهداف ومهمات يومية وأسبوعية يسعون لتحقيقها					
51	يتصف أفراد أسرتي بالرضا والقناعة					
52	يتميز أفراد أسرتي بردود فعل متسرعة تجاه أي مشكلة					
53	تحافظ أسرتي على زيارة الأقارب بشكل مستمر					
54	عندما يخطئ أحد أفراد أسرتي فانه يعترف بالخطأ					
55	تحث أسرتي أفرادها على إبداء أرائهم					
56	تعطي أسرتي لأفرادها إحساسا بالأهمية والقيمة					
57	نقضي جزءا من أوقات فراغنا في أنشطة حركية					
58	يقرأ أفراد أسرتي الكتب الثقافية					
59	نقوم في أسرتي بتنظيم أنشطة لأطفال الأسرة					

60	يميل أفراد أسرتي لبث همومهم لأفراد من خارج الأسرة					
61	يعيننا إيماننا بالقدر على الرضا وتخطي الأزمات التي تمر بها أسرتنا					
62	يسعى أفراد أسرتي إلى استشارة بعضهم عند اتخاذ قراراتهم الخاصة					
63	تستغل أسرتي كل الفرص المتاحة للنجاح والتفوق					
64	نتخذ خطوات عمليه لمواجهة المشكلة					
65	تحافظ أسرتي على وجود اتصالات هاتفية دائمة بالأقارب					
66	هناك شفافية في التعامل بين أفراد أسرتي					
67	تؤيد أسرتي حرية الاختيار في حدود المبادئ العامة					
68	هناك بعض الأمور تحدث داخل أسرتي اخجل إن يعرفها الآخرين					
69	لكل من أفراد أسرتي مسئولية محددة					
70	يدخن أحد أفراد أسرتي داخل المنزل بوجود أفراد آخرين حوله					
71	نقصد المواقع الثقافية حين نقضي وقتا على الانترنت					
72	يفضل أفراد أسرتي الجلسات العائلية على البقاء في غرفهم بمفردهم					
73	يشعر أفراد أسرتي بالراحة النفسية والاطمئنان حين يكونون مع بعضهم					
74	يطبق أفراد أسرتي القيم الإسلامية في تعاملاتهم (كالصدق والأمانة وإخلاص العمل)					
75	يتصف أفراد أسرتي بحسن استغلال أوقاتهم وترتيب مواعيدهم					
76	عند تناول موضوع ما فإننا نتناوله من وجهات نظر متعددة					
77	يشارك جميع أفراد أسرتي في حل المشكلات الأسرية					
78	لدينا مشاركات مع الهيئات المعنية بخدمة المجتمع					
79	يعطى لكل فرد في أسرتي مساحة لإبداء رأيه					
80	الثواب والعقاب أسلوب مؤثر في التربية لدى أفراد أسرتي					
81	تتعاون أسرتي من اجل تحقيق احتياجاتها					
82	يشعر أفراد أسرتي بالأمان داخل الأسرة					
83	لدينا مكتبة صغيرة بالمنزل					
84	يكثر الصمت في جلساتنا العائلية وخلال تناول وجباتنا الغذائية					

85	نستمتع بقضاء أوقات الفراغ مع بعضنا					
86	يساهم أفراد أسرتي في الأعمال التطوعية (كالجمعيات الخيرية- الصدقات- كفالة الأيتام..الخ)					
87	نضع خطة لميزانية الأسرة ومصاريفها					
88	أحياناً يلجأ أحد أفراد أسرتي للكذب في بعض المواقف					

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EDUCATION

Doctor of Public Health April 2017
The Johns Hopkins Bloomberg School of Public Health, Baltimore, USA
Department: Health, Behavior and Society

Master in Public Health May 2009
Boston University, USA
Concentration in Social and Behavioral Sciences
GPA 3.7 out of 4.0

Graduate Diploma in Entrepreneurial Management Dec 2008
Boston University, USA

Bachelor in Psychology Jan 2005
King Saud University, Saudi Arabia
Concentration in Clinical Psychology
GPA 4.62 out of 5.0 with Honors

- Honor Student Award, School of Education, King Saud University, 2005

EMPLOYMENT EXPERIENCE

Graduate Teaching Assistant 2016
The Johns Hopkins University Bloomberg School of Public Health
Assisting in teaching and grading graduate students in Implementation and Evaluation for Tobacco Control, and Qualitative methods in Tobacco Control classes.

Intern 2015 – 2016
Johns Hopkins Center for Communication Programs (CCP)
Health Education and Early Detection Program in Saudi Arabia
Responsibilities include reviewing the literature, facilitating fieldwork, contributing to the writing of the state report and publishable papers. This project is conducted by CCP and E&Y and commissioned by the Saudi Health Council to support the achievement of the Kingdom's National Health Strategy. *Saudi Arabia and the US*

Lecturer 2010 - 2011
King Saud bin Abdulaziz University for Health Sciences, College of Public Health and Health Informatics, Health Systems and Quality Management Department
Responsibilities included conducting public health research, organizing seminars, college activities and networking events, collaborating in the evaluation of curriculums and teaching methodologies, and providing the department with administrative support. *Riyadh, Saudi Arabia*

Trainer and Research Assistant 2010 - 2011
Hulool Center for Behavioral Counseling and Social Development
Presenting self-management training courses, providing online counseling, and participating in research projects that aim towards designing and implementing community intervention programs. *Riyadh, Saudi Arabia*

Policy Analyst 1 2010
National Guard Health Affairs (NGHA) Organization and Management, Internal Audit and Organizational Development Division
Responsibilities included maintaining a centralized and categorized system of Administrative Policies and Procedures (APPs) across NGHA, and collaborating in the development and review of new and revised APPs. *Riyadh, Saudi Arabia*

Executive Director of the Female Division 2009 - 2010
Hulool Center for Behavioral Counseling and Social Development
Responsibilities included developing and implementing short and long term plans, providing leadership in implementing projects, encouraging staff and volunteer development and education, and maintaining sound financial practices. *Riyadh, Saudi Arabia*

Intern 2008 - 2009
Management Sciences for Health (MSH) Leadership, Management and Sustainability Program
Responsibilities included assisting in populating and updating the Leadership Development Program (LDP) Database, and virtually supporting the sustainability and scale up of the LDP in Aswan, Egypt. *Cambridge, USA*

Intern 2004 - 2005
Riyadh Military Hospital Department of Psychology
Trained to work as a clinical psychologist to treat patients with mental disorders, within a team of a psychiatrist and a social worker. *Riyadh, Saudi Arabia*

Workshop Coordinator 2003- 2004
Al-Rashed Center for Human Development

Organizing workshops, assisting self-development trainers, making logistical and financial arrangements, and program evaluation. *Riyadh, Saudi Arabia*

Co-Founder 2001 - 2002
The Kind Word Group
Launched, with a friend in college, a nonprofit start-up business to design, execute and market office products (such as notebooks, calendars, and bookmarks) with meaningful Arabic quotes and hand-painted designs.

Journalist 1999 – 2001
Under Twenty Magazine, Kuwait
Working as a reporter for the magazine in Riyadh, Saudi Arabia: Writing articles, collecting surveys, and contributing reports.

COMMUNITY TRAINING AND TEACHING EXPERIENCE

a. Courses:

Alhumaid N. *True Meaning of Life, Positive Thinking, Goal Setting Strategies, and Creating a Project of Your Own*. Proactive Students Training Program. Al-Fursan High School. 2011

Alhumaid N. *Community Participation for High School Students.* Summer High School Program at Hulool Center. 2010

Aljurayed M. Alhumaid N. Alzaid E. *Training of Trainers: Positive People Training Program.* Hulool Center. 2010

Alhumaid N. *How to Talk so Kids Can Learn: A Message to Elementary School Teachers.* Al-Riyadh Private Schools. 2010

Alhumaid N**.** *How to Start Volunteering at a Young Age?* Together We Build the Future Center. 2010

Alhumaid N. *Introductory to the Seven Habits of Highly Effective People.* Al-Riyadh Private Schools. 2010

Alhumaid N. *Youth Community Participation*. Building Leaders Program. Gheeras Organization. 2009

Alhumaid N. *Arabic Pronunciation*. Al-Huda Society. Chelsea, MA.US. 2008 Alhumaid N. *Arabic Conversation Classes to Intermediate Level Students*. Islamic Society of Boston. US. 2007

Alhumaid N. *Implementing NLP Strategies in Dealing with Clients- Psychology Intern Students.* Department of Psychology, King Saud University. 2005

Alhumaid N. *Self-Confidence.* Youth Summer Program, World Assembly of Muslim Youth. 2004 Alhumaid N. *How to Create Your Life Plan.* Colored Summer Program, Gheeras Organization. 2004

Alhumaid N. *Awaken the Energy within You*. Students Activities Programs, King Saud University. 2003

Alhumaid N. *Building Healthy Relationships.* World Assembly of Muslim Youth. 2003

Alhumaid, N. *The Mission and Vision of Your Life.* Al-Nahda Community Center. 2002

Alhumaid N. *Introductory to Neuro-Linguistic Programming.* World Assembly of Muslim Youth. 2002

b. Public Lectures:

Leave Your Imprint. Advanced Learning International School. 2011

Impact of Positive families Training Program. Prince Salman Community Center. 2010

Physical Activity for Women's Everyday Life. Rabwat Arryad Annual Event. 2009

Achieving Your Lifetime Goals. Aljazeera High School. 2009

Adding a Value to Your Life. We Can, Young Women Empowerment Club. 2009

Empowering Orphan Families. Insan Organization for Orphan Support. 2009

Volunteering: Lessons from East and West. Sanad Childhood Cancer Organization. 2007

How to Choose Your Major? Alawa'el High School.2005 *What is After Graduation?* King Saud University.2004

Love: Insights and Inspirations. College of Education, King Saud University.2004

Time Management for Medical Students. College of Medicine, King Saud University. 2003

Who Moved my Cheese: Overview of the Book and Lessons Learned. Students Association, King Saud University. 2003

PUBLISHED ARTICLES (NON PEER-REVIEWED)

Alhumaid N. *Answers to Online Counseling*, Online Counseling Services, Hulool Center for Behavioral Counseling and Social Development. 2010

Alhumaid N. *A Balanced Diet: An Overview of My Pyramid Plan.* Positive Families TV Program Coverage, Positive Families Forum. 2010

Alshariday S. Alhumaid N. *Positive Families Program Opening Ceremony*. Al-Riyadh Newsletter. 2010

Alhumaid N. *Humanitarian Day for the Homeless in Boston, MA*. Almokhtsar News. 2007 http://www.almokhtsar.com/news.php?action=show&id=78730

Alhumaid N. *I am Different*: *Becoming Proactive*, Brochure, Students Activities, King Saud University. 2002

Alfakhry, R. Alhumaid N. Alsugayer, H. *Marriage Expectations and Realities among Arab Girls*. Report, Under Twenty Magazine. 2000

POSTERS

Carol Underwood, Zoe Hendricjson, **Nuha Alhumaid**, and Tagreed Algaith (2016) Health Communication and Non-communicable Diseases: Associations between health communication recall and intermediate outcomes in Saudi Arabia. International SBCC Summit.

SCHOLARSHIPS AND AWARDS

Outstanding Student Award 2013
Awarded by the Saudi Ministry of Higher Education to students with outstanding performance in Ivy League schools in the United States

KSAU Scholarship 2011
Doctoral degree scholarship providing full coverage of academic and living expenses at Johns Hopkins Bloomberg School of Public Health

King Abdullah Scholarship 2006
Master degree scholarship, awarded to qualified students by the Ministry of Higher Education, providing full coverage of academic and living expenses.

Honor Student Award 2004
Awarded to an outstanding student on the basis of character, scholastic ability, and qualities of leadership by the School of Education at King Saud University.